CHLORIDE OF SULPHUR
BISULPHIDE OF CARBON
CARBON TETRA-CHLORIDE
ALCANNIN PASTE
Geo. W. Speaight,
106 Fulton St., New York

The BEST BUCKLES for ARCTICS
ARE MADE BY
THE WELD MFG. CO.,
41 Lincoln Street, - - Boston.

"Cravenette"
RAIN COATS
Must have this Circular Trade Mark stamped in inside of coat.....
Cravenette TRADE MARK.

RECEIVED
JAN 4 1906

Edited by HENRY C. PEARSON—Offices, No. 150 Nassau Street, NEW YORK.

Vol. XXXIII. No. 4. JANUARY 1, 1906. 35 Cents a Copy. $3.00 Per Year.

READY JANUARY 15—A NEW JOURNAL.

will be published monthly, aiming to be a high class journal, devoted primarily to the interests of

Tire Users

whether on automobiles or any other vehicles equipped with rubber. It will be edited and written by experts, and every effort will be made to present the newest and most accurate information available in regard to

The Functions of Various Kinds of Tires
How Rubber Tires Are Made
The Materials Used in Tires
The Care Required for Tires
Means and Methods of Tire Repairs
How to Buy Rubber Tires

TIRE NEWS

is designed to be of practical use to

Automobilists
Chauffeurs
Repair Men

and all others who have occasion to handle Tires, as well as Manufacturers and Dealers.

SUBSCRIPTION.
Per Year, Postpaid, $1.00.
Abroad, $1.50.

THE TIRE NEWS CO.,
No. 150 Nassau Street,
NEW YORK.

Chloride of Sulphur

Carbon tetra-Chloride

Largest Makers in the World.

Acker Process Co. Niagara Falls, N.

SEE PAGE XXVI

LAMPBLACKS especially for RUBBER MANUFACTURE.
SAMUEL CABOT, BOSTON, MASS.

TRADE MARK

SHOE OUTPUT: 15,000 Pairs Daily. ESTABLISHED 1856.

THE CANADIAN RUBBER CO. OF MONTREAL

MANUFACTURERS OF LIMITED

ALL KINDS OF HIGH GRADE GENERAL RUBBER GOODS.

AND SOLE MAKERS OF THE

Celebrated "CANADIAN" Rubbers.

We are always open to correspond with experienced Rubber men, both for Factory and Executive Work.

Factory and Executive Offices: MONTREAL, P. Q.

Inventions kindred to the Trade and ideas for development, invited. Our Development Department gives these matters special attention.

Sales Branches: HALIFAX, N. S., MONTREAL, Que., TORONTO, Ont., WINNIPEG, Man., VANCOUVER, B. C.

ESTABLISHED 1859.

THE LIVERPOOL RUBBER COMPANY, Ltd.

LIVERPOOL, ENGLAND.

TRADE MARK

The highest grade of Rubber Boots and Shoes, "Liver" and "Ideal" Canvas Shoes, etc., etc.

High grade Mechanical, Engineering and Mill Work, Railway Springs, Valves, Buffers, Sheets, Insertion, Rings, Bladders, Deckles, Printers' Blankets, Hose, Belting, Mats, Packing, etc., etc.

Cycle and Carriage Tires, "Lockfast" pneumatic, single tube, cushion and solid. *India Rubber Thread.*

CHIEF OFFICE: 292 VAUXHALL RD., LIVERPOOL,
and at 34 Aldermanbury, London, E. C.,
20 Rue des Marais, Paris,
333 Kent St., Sydney, New South Wales.
Factories: Vauxhall Road, and Walton, Liverpool.

Mention the India Rubber World when you write.

FLAKE GRAPHITE

THE BEST FOR

RUBBER PACKING
MECHANICAL RUBBER GOODS
and LUBRICATING.

Samples and prices on application.

UNITED STATES GRAPHITE CO.,

Business Office: 1208 Arch St., Philadelphia.
Mines, Mills and Refineries: Byers, Chester Co., Pa.

Mention the India Rubber World when you write.

THE S. & L. RUBBER COMPANY

Manufacturers of

RECLAIMED RUBBER

FLOWER STREET and DELAWARE AVENUE,
CHESTER, PA.

Mention The India Rubber World when you write.

INDIA RUBBER WORLD
CAOUTCHOUC. GUTTA-PERCHA.

Published on the 1st of each Month by
THE INDIA RUBBER PUBLISHING CO.
No. 150 NASSAU ST., NEW YORK.

HENRY C. PEARSON, EDITOR. HAWTHORNE HILL, ASSOCIATE.

Vol. 33. JANUARY 1, 1906. No. 4.

SUBSCRIPTIONS: $3.00 per year, $1.75 for six months, postpaid, for the United States and Canada. Foreign countries, same price. Special Rates for Clubs of five, ten or more subscribers.

ADVERTISING: Rates will be made known on application.

COPYRIGHT, 1905, BY THE INDIA RUBBER PUBLISHING CO.

Entered at New York Post Office as mail matter of the second-class.

TABLE OF CONTENTS.

PAGE.

Editorial:
The State of the Trade ... 103
Rubber Slavery in the Congo ... 103
Large Yield from Planted Rubber ... 104
Washed Rubber from the Far East ... 104
"Working Out of It" ... 105
Minor Editorial ... 106

Obituary ... 106
[With Portrait of William E. Page.]

Rubber Tapping on Kepitigalla Estate ... *Ivor Etherington* 107
[Methods and Results on an Important Plantation of Hevea in Ceylon.]
[With 7 Illustrations.]

Planting "Ceara" Rubber in Colombia ... *Henry G. Granger* 112

The Defence of the Congo Administration ... 113
[Report of the Committee on Enquiry Appointed by King Leopold to Consider Alleged Abuses in the Congo Free State.]
[With Portrait of Leopold II.]

The India-Rubber Trade in Great Britain. *Our Regular Correspondent* 115
[The Stanley Show. Solubility of Rubber in Benzine. Messrs. G. H. Scott & Co. Mr. Hancock Nunn. Golf Ball Rubber. War Office Tape. Daniels's Packing. Waste Rubber Valuation. Rubber Absurdities. Dunlop Reorganization. Rubber in Peru. Mr. Coops.]

Rubber Planting Interests ... 117
[Borneo. Jamaica. Costa Rica. Ceylon. "Camp Pearson."]

India-Rubber Goods in Commerce ... 118

Recent Rubber Patents ... 119
[United States. Great Britain. France.]

Official Statistics of India-rubber and Gutta-Percha ... 122
[For the United States Fiscal Year 1904-05.]

Rubber Interests in Europe ... 123
[Recovery from the Fire at Harburg. Improved Profits of the Silvertown Company. The Continental Rubber Works. Dunlop Pneumatic Tyre Co., Limited. The Dunlop Company in Liberian Rubber. Rubber Workers' Strike at Munich. An Old German Rubber Factory.]
[With 1 Illustration.]

Tires at the Olympia Rubber Show ... 125
[With 3 Illustrations of Exhibits.]

New Goods and Specialties in Rubber ... 127
[Two Attractive Novelties in Matting. Novel Perfumery Bottle. New Tennis Sole From Canada. Dr. Tullar's Family Syringe. Two New Packings. Goodrich Circular Eraser. The "Tube Core" Golf Ball. Rubber Teapot Spout. Air Cushion Typewriter Feet.]
[With 8 Illustrations.]

Miscellaneous:
The Editor's Book Table ... 105
Echo of a Swindle in Rubber ... 106
Dr. Esch on Castilloa Rubbers ... 117
Rubber on the Steamer Amerika. *(Illustrated)* ... 118
Rubber Coin Mat Novelties ... 118
Balloons in the Weather Service ... 118
Why Do Business Without a Profit? ... 121
Air Brake Hose on Freight Trains ... 121
The Stanley Cycle Show ... 125
Rubber Development in Peru ... 128
Facts About Colorado ... 128
The Guayule Factory at Torreon ... 128

News of the American Rubber Trade ... 129
[With 1 Illustration.]
The Rubber Trade in Akron ... *Our Correspondent* 135

Review of the Crude Rubber Market ... 136

THE STATE OF THE TRADE.

IT is the custom of many trade journals at this season to present a review for the year just closed of business conditions in their respective fields, with perhaps an attempt to outline the course of trade for some time ahead. Such summaries often are of interest, and doubtless serve a good purpose, just as does the periodical balancing of books or taking account of stock by the individual merchant or manufacturer. But the close of a calendar year presents no special reason for attempting a review of the India-rubber industry, which is diversified in so many branches, with business years terminating at different dates. The rubber shoe season, for example, is at its middle about January 1, and the results of the winter's trading impossible to estimate until the close of winter.

At the same time, the interruption in business which comes every year with the holiday week gives to every business man an opportunity to consider with what measure of success his efforts during the year have been crowned. If a comparison of all branches of trade, one with another, could be made, it doubtless would be found that rubber has more than held its own for the past twelvemonth, if, indeed, it has not done better than many other branches, though this has been a period of general prosperity in the United States and in the greater part of the commercial world.

Never before has the demand for rubber goods been so great, or the consumption so large. Never before has rubber entered on an important scale into so many uses. Many manufacturers, it is true, have felt handicapped by higher prices for raw materials than in the past, but raw rubber has been high priced because of an unprecedented call for rubber goods, and when a pressing demand exists for manufactures the producer is better able to dictate prices than when the market is over supplied. Still, there are limits to prices which the rubber manufacturer cannot overleap, and the situation of late has constrained him to put forth his best efforts to improve his processes and methods, to lessen the cost of products, to the end that marked advancement is being made in the industry. This has been distinctly a period of progress in rubber working, such as does not occur in periods of dullness.

The situation in the rubber industry, to all appearances, is healthful; on the whole the business continues profitable; there is every indication that the new year will duplicate the record of that just closed. Every sign for the future is encouraging—for the energetic, enterprising, progressive rubber manufacturer, who has mastered his business, is properly equipped with capital, and possesses good judgment. These qualifications should command success in any business, but nowhere, we take it, more certainly than in rubber at this period.

RUBBER SLAVERY IN THE CONGO.

THE high commission appointed by the king of the Belgians to inquire into conditions in the Congo Free State has produced a report which, while admitting that in

some cases natives have been treated with harshness and injustice, strives to absolve the state authorities from direct responsibility for any wrong. No doubt many of the reports of cruelty have been exaggerated; it is difficult anywhere to gain the exact facts in regard to any occurrence, and this difficulty is increased when so many persons, remote from the Congo regions, each biased by some particular interest—philanthropic, political, or commercial—have been ready to lend a ready ear to every rumor that seemed to support their preconceived views with regard to conditions there.

But the Congolese natives have gathered immense quantities or rubber, as all the world knows; began all of a sudden to gather it, to the practical exclusion of every other interest, and in the face of increasing difficulties in the way of gaining a given amount in a given time; and without any sort of tangible return, such as might be supposed to tempt uncivilized natives, not before addicted to industry, to change their natures in this regard. What made them do it? Compulsion, the report admits. At whose hands? The traders', operating in the Congo only with the consent of the State, which shares largely in the profits as the price of granting trading monopolies.

Can you, the reader, buy rubber in the territories exploited under concessions? Can any native sell the product of his labor to any but a *concessionaire* trader? Can any native refrain from gathering rubber if he prefers to go fishing? Does the native get for his rubber the means to clothe himself better, or procure better food, or make his home more comfortable than before the rubber traders drove him into the woods to work for their benefit? The commission's report affords no affirmative answer. The Arabs no longer sell the Congolese into slavery, the report does assert, but is the slavery of rubber gathering any better? Money has been spent in improving means of transportation, but is this for the uplifting of the native, or for the primary interest of the trading companies.

But discussion of these questions will not check the reckless exhaustion of the Congo rubber supply, which may be expected to continue until consumers of rubber must look to other sources to meet their demands. When that time comes the traders will have made enough money to enable them to retire on comfortable fortunes, and the State, despoiled of its greatest natural wealth, will probably not be thought worth contending for—at least until many more eligible regions have been more fully developed.

LARGE YIELD FROM PLANTED RUBBER.

STRANGE as it may at first appear, the actual productive capacity of no rubber yielding species has yet been subjected to tests sufficiently accurate or comprehensive to lead to a determination of this really very important question. But it must be considered that the greater part of the world's supply of rubber hitherto has been extracted from forest trees, in regions remote from centers of scientific research, by native races having a very limited intelligence. Why should a Brazilian indian or a Congolese negro care to note the yield of a particular rubber tree, even if he had the capacity to register it, which is doubtful? And why should the buyer of rubber, at a distant trading post, care to know what one tree could be made to yield? Both the gatherer of rubber and the trader who has him in subjection cares only for general results.

It is different with the planter of rubber as a commercial proposition. But the rubber culture is yet in its infancy, and with a few exceptions only very young planted trees have been available for experimenting. It was natural at first for planters to adopt the practice, with regard to the different rubber species, by which various native races have obtained so many millions of pounds of rubber in the past, but of late some of the planters, of an investigating turn of mind, have been looking further into the matter, and already with surprising results.

A notable contribution to this subject appears elsewhere in our pages, from the pen of Mr. Ivor Etherington, of Ceylon. It appears that within two years, on one estate, the average yield of young *Hevea* trees has increased from less than 1 pound—then regarded as a fair return—to more than 5 pounds. But it is not reasonable to suppose that the limit of productive capacity has increased in any such ratio: the increased yield has been due to better methods. But returns from certain older trees are even more surprising. Think of an average of 16 pounds from trees less than 13 years old—pointing to a money profit of $20 per tree, capable of being planted 150 to 200 per acre! Another result of better tapping methods than were at first practiced. These figures will have further weight when we mention that THE INDIA RUBBER WORLD has nowhere found a record of 16 pounds of rubber yielded in one year by the oldest *Hevea* trees in the Amazon valley.

It does not follow that an equally large yield can be obtained everywhere, even from *Hevea* species; still less does it follow that these results can be duplicated with any other species. But what we want to point out is that by continued and intelligent experimenting the Ceylon rubber planters are obtaining much more rubber than by any method formerly used. And this fact, it seems to us, should suggest to planters of other rubber species, in other regions, that perhaps they have not yet found the means to obtain from their trees the maximum yield of which they are capable.

WASHED RUBBER FROM THE FAR EAST.

THERE seems to be a diversity of opinion as to the wisdom shown in preparing rubber as it is now coming from the Far East—that is, rubber in what is known as the "washed" form. To-day the market receives two kinds of washed "Para" from Ceylon and the Federated Malay States, one of which is known as "crepe" and the other as "worm" rubber. The physical shape of these two types is due to the machines through which the latex passes in the process of coagulation and in getting rid of the water. The special objection that importers and brokers have against rubber in this form is their fear that the manufacturer will look

upon it as a partially manufactured product; that it has been handled on rolls similar to those that they use in compounding, and, therefore, that it may be adulterated. On the other hand, the planters find that they can handle the latex much easier and more rapidly, and have apparently determined to deliver it in one or both of these forms. The chances are that unless some better method is discovered, the planters will triumph.

Samples of the rubber that have been examined by the writer are excellent, and it can easily be proved whether adulterants are present or not by very simple tests. Further than this, there does not seem to be the slightest fear that any of the Far Eastern planters will adulterate their rubber. The tendency has been from the start to make just as good a product as possible, and to identify whatever is sent out with the plantation where it is grown. It is possible that the customs offices in "protection" countries may at first classify such rubber as a manufactured product, but there is little doubt but that such decisions could be reversed if the matter were put before the proper officials in the right way. What is needed more than anything else is to get out more rubber, and whether it is "crepe" or "worm" or "pancake" or "sheet," it is bound to find a good and profitable market, and in the long run the simplest method of coagulation and handling is that which will prevail.

"WORKING OUT OF IT."

THAT there has been a notable advance in the knowledge of rubber and of rubber manufacture in the last few years goes without saying. Chemists, superintendants, and rubber workers are all far better equipped and know more about the business than ever before. At the same time it comes to even the best manufacturers every now and then that they are but at the beginning of the solution of the great problems that the industry presents. This appreciation of lack of exact knowledge is driven home when certain high grade goods that are most carefully compounded, and where every detail of the manufacture is apparently guarded against accident, suddenly begin to "go bad." Then it is that all the experts are called in, and the combined experience of the factory brought to bear to locate the cause. Usually there are a half score of theories formulated, any one of which appears reasonable. When these are all exploded and the goods still come out of the heaters damaged, the sense of helplessness is something pitiful. Then as a rule the damage lessens, and to use a factory phrase, they "work out of it," the result being that they neither know why the trouble began nor why it ended. There are, no doubt, expert and enthusiastic chemists who will claim that to-day no such conditions should exist. The only answer is, that they certainly do, and in the face of all expert knowledge. This is the reason that when any compound or process is working well on high grade goods in any rubber factory, and a new ingredient, a new process, or a new machine is urged by an enterprising salesman, the manufacturer so often turns a deaf ear and insists upon letting well enough alone.

IT USED TO BE A COMMON REMARK in the trade that, so narrow is the margin between the production and consumption of rubber, the loss of a single cargo at sea would notably influence prices. The assertion has had partial proof of late, though as yet, we believe, no important cargo of rubber has ever been lost on the high seas. But recently a shipload of 210 tons went down in the Amazon, and the first effect was an advance in London prices. This was only temporary, however, since stocks were larger than for some time, and the hope prevailed that the sunken rubber would be raised. It now appears that all of the *Cyril's* cargo has been salved but 17 tons. But a single ship has sometimes carried a thousand tons of rubber from the Amazon, and the loss of such a quantity in midocean would indeed upset all market calculations. The shippers might be protected by the insurance companies, but the world would miss the rubber. A consoling feature of the *Cyril's* case is that rubber is not injured by so slight an accident as being dumped in the bottom of a river for a few weeks. It is, indeed, subject to fewer ill influences than almost any other cargo known to commerce.

IT IS PLEASING TO KNOW that somebody is getting a "square deal" in connection with "rabbit weed" rubber. Our esteemed contemporary, *The Democrat*, of Durango, Colorado, in a report on preparations for producing rubber in that locality, says that "those who gather the weed are paid in accord with their effort and intelligence in harvesting it." This, of course, is most commendable. But we had been led to suppose that it was the lack of intelligence that counted in the much vaunted development of the Colorado rubber industry; the less intelligence on the part of investors, the greater the success of the company promoters.

THE SCARE HEADLINES IN THE NEWSPAPERS, in regard to an alleged Tire Trust, are interesting, even if they are not accurate. The truth is that certain licensees under the G. and J. patents are making tires, and none others are able to use exactly the same fastening. The result has been that the quality of the tires has been kept up, and just as good a product put on the market as possible, nor have exorbitant profits accrued to the manufacturers. It is doubtful if the average profit of the licensees has been 10 per cent. since the automobile tire first found a market.

THE EDITOR'S BOOK TABLE.

ELECTRICIANS' HANDY BOOK. A MODERN WORK OF REFERENCE. A Compendium of Useful Data, Covering the Field of Electrical Engineering. By T. O'Conor Sloane, A.M., E.M., Ph.D. New York: The Norman W. Henley Publishing Co. 1905. [Leather. 8vo. Pp. 768. Illustrated. Price, $3.50.]

THIS is by no means Professor Sloane's first literary effort in the electrical field, and it is barely possible that the single word "Sloane," on the cover, will sufficiently recommend the book to the initiated. Beginning with a treatise on algebra, the reader is hurried over the general principles of theoretical and applied electrical engineering, descriptions of processes, and of instruments, the main points being illustrated with copious drawings and diagrams. It must be confessed, however, that it conveys not the slightest idea of the immense importance of India-rubber to the electrical industries. Beyond the recommendation that "good India-rubber shoes" be worn when working around electrical machines, it is impossible to find in the book any mention of India-rubber or Gutta-percha.

IN CURRENT PERIODICALS.

ZUR Castilloakultur. By Th. F. Koschny. [Relates to the observations of the author in Central America.]=*Der Tropenpflanzer*, Berlin, IX-12 (December, 1905). Pp. 690–697.

OBITUARY.

WILLIAM E. PAGE.

THE death is reported of William Elias Page, general manager of the Chicago-Bolivian Rubber Co., while on his way from Bolivia, somewhere in the vicinity of San Antonio, which is 750 miles above Manáos, on the Madeira river. The cablegram received in Boston gave no particulars, so that at the time of writing it is impossible to decide whether this brave adventurer came to his death through the upsetting of his canoe and drowning, or from pernicious fever; either calamity being quite possible, as the Madeira river at the time was very low.

Mr. Page was one of the pioneers in the Amazon country. He represented Henry A. Gould for some time, and later was in the crude rubber business as a trader at Manáos. Since 1883 he has spent alternate years either in the Amazon country or in Bolivia, with the exception of perhaps two years, when he was connected with the Crude Rubber Co. in New York. On January 11, 1904, he left for Bolivia, going in from the West coast, and labored most energetically to get a working force together for the Chicago-Bolivian Rubber Co. in order to get out more crude rubber. He also did much exploring.

Mr. Page was of athletic build and inured to tropical life and, had he lived, would undoubtedly have done much to develop the riches of the Bolivian rubber forests. He was 49 years old, was a member of the Harvard class of '79, and one whose knowledge of the greatest rubber producing area of the world was most complete. He leaves two sons, both of whom are connected with rubber houses, one being in the employ of George A. Alden & Co., and the other of the Hood Rubber Co.

At a special meeting of the executive committee of the New England Rubber Club, held on November 28, 1905, the following resolutions, were passed and it was voted to appoint a committee to attend the memorial services as a mark of respect to its late member, Mr. William Elias Page:

WHEREAS, News has reached us of the death at San Antonio, Brazil, South America, of our friend and fellow member, we the executive committee of the New England Rubber Club, in recognition of our loss and of our esteem for his memory, record the following resolutions:

Resolved: That in the death of our fellow member, William Elias Page, our association has lost a valued friend.

Resolved: That the rubber trade has been deprived of the benefit which, regardless of self sacrifice, he had hoped to bring to it through his research in the wilds of South America.

Resolved: That we extend to his widow and family, our deep and sincere sympathy.

Resolved: That these resolutions be spread upon the records of this Association, and that a copy be engrossed and presented to his family.

JOHN H. FLINT, President.
ARTHUR W. STEDMAN, Vice-President.
GEORGE P. WHITMORE, Treasurer.
ELSTON E. WADBROOK, Assistant Secretary.

=Mr. James Ross Parsons, Jr.. United States consul general in Mexico, lost his life on the evening of December 5, in Mexico City, from being thrown from his carriage in a collision with an electric street car. Mr. Parsons, who has been mentioned a number of times in THE INDIA RUBBER WORLD in connection with official reports on rubber planting prospects, was still a young man and had not long been in office, but gave promise of becoming a valuable member of the consular service. On Christmas day his remains left Mexico City, with a military escort detailed by President Diaz, destined for Mr. Parsons's native town in New York state.

=Mr. Edward Atkinson, a well known social and political economist of Boston, died suddenly on December 11, in his seventy-ninth year. He influenced public opinion by his writings and addresses on many subjects, but in his relation to business he was an insurance man, having been for a long time president of the Boston Manufacturers' Mutual Insurance Co., which he helped to establish. The principle upon which this company is based is the same as that governing the successful Rubber Manufacturers' Mutual Insurance Co.

ECHO OF A SWINDLE IN RUBBER.

A REPORT reaching New York from Caracas since the last issue of this Journal states that the Fuchs Syndicate have foreclosed their mortgage, which means that the Pará Rubber Plantation Co. are now without property in Venezuela, the Ber- their tract never having been acquired.

It will be remembered that the Pará Rubber Plantation Co., alias the International Rubber and Trading Co., alias the Two Republics Chartered Co., began about 2½ years ago to advertise very widely the sale of shares of stock, claiming to be actually shipping rubber from Venezuela at a great profit, and with the use of Mr. John Cudahy's name as head of the company, many victims appear to have been separated from their money. Readers of THE INDIA RUBBER WORLD know, however, that the company's transactions were confined to the sale of shares, such dividends as were paid having been returned to the investors out of their own money. In other words, the whole business was pure fraud, though there is no evidence that Mr. Cudahy knew this until the promoters of the company had lined their pockets and disappeared.

There had to be *some* basis for the company originally, and this was a contract to purchase a certain concession from the Venezuelan government held by Belgian parties known as the Fuchs Syndicate. The purchase price is understood to have been $125,000 in cash and $750,000 in shares of the Pará Rubber Plantation Co. It appears that a payment of $25,000 was actually made, and the mortgage covering the remainder has now been foreclosed.

WATERPROOFING COMPOUND.—United States patent No. 802,670, granted to Maxmilian Toch, of New York, relates to a waterproofing compound which admits of cold application, composed of a mixture of hard bitumen dissolved in chinawood oil and linseed oil, to which a solution of gum kauri, fused in linseed oil, and petroleum bitumen are added, and which liquid is then reduced to a specific gravity of about 0.95 by the addition of turpentine, benzol, and naphtha.

AMAZON CABLE.—The accounts for the year ended June 30, of the Amazon Telegraph Co., Limited, for the first time show a net profit, which, after providing for interest charges, amounts of £9836 [=$47,866.89], reducing the debit balance brought forward to £78,235.

RUBBER TAPPING ON KEPITIGALLA ESTATE.

By Ivor Etherington (Colombo).

IT is to be regretted that the Editor of THE INDIA RUBBER WORLD, when in Ceylon a year or two ago, was not able to include the important Kepitigalla estate, in the Matale district, among the rubber plantations he visited. But as a typical example of a well worked plantation of cacao and *Hevea Brasiliensis*, a brief account of it may now prove acceptable to the readers of this Journal.

For a country with such a well developed system of railways and fine roads, Kepitigalla must be accounted as very much out of the way. It is 18 miles as the crow flies from the nearest railway, but the steep hills and deep valleys can only be crossed by miles of zigzagging bridle paths, and short cuts through the jungle of virgin forest. On the other side the outlet is also a long winding track across streams and torrents and through dense jungle and newly opened rubber clearings, and by a precipitous pass in the surrounding hills to the Sinhalese village of Wé-uda on the road, 12 miles to Kurunegala, the nearest railway on that side.

When Mr. Francis J. Holloway, the estate manager, invited the writer to face the journey and visit the estate and his new rubber factory, no second invitation was needed. A Sinhalese bullock hackery is not the most comfortable kind of traveling cart that can be thought of, and 12 miles of it up and down hill with the temperature almost running into three figures in the shade makes one both sore and dry. For the first there is no remedy until the journey's end; to remedy the latter complaint one has only to pull up frequently at the native huts by the roadside and mention the magic word "kurumba" to the more or less scantily attired son of Adam busily employed cleaning his teeth for hours together, or examining his son's, wife's, or neighbor's head for the same reason that monkeys do. He arises, walks nimbly up the 30 feet stem of the nearest cocoanut palm and returns with a mighty green nut; three strokes and a whittle with his knife and he offers you one of nature's most cooling and refreshing drinks. Wé-uda is at last reached and there after changing one's wringing wet underclothes, the horse, sent up by Mr. Holloway, is mounted and the last stage of the journey commenced.

TRANSPORT ELEPHANTS ARRIVING AT THE ESTATE FACTORY.
[Photograph by Mr. Etherington.]

The sky, shortly before so blue and cloudless, is now covered with dense black clouds presaging a big storm. Down come the heavy drops, accompanied by a terrific thunderclap, drenching one to the skin in a few moments. The path leading up the pass is steep enough, but on the descent side it is precipitous and rocky, washed by torrents swollen by the heavy rains, and where even a goat would have to hold on by the skin of its teeth the horse finds it no easy work, and one has to grin and enjoy the feel of soaked clothes and hope for something better at the end. The path runs along the side of a fine gorge, the mountains towering up on each side and every two or three minutes lit up by the vivid lightning playing over the rocks while the thunder echoes and reëchoes round the hills rolling round like almost continuous artillery fire. Soon the flat basin of the Deduru-oya river lies far below, chequered with bright green patches of native rice fields, small patches of cultivated gardens, and blocks of dense jungle. Facing one is a long range of hills with ragged rocky points, forming the watershed of the river; along this hillside runs what looks in the distance like a fine young forest, but what I know to be the cacao and rubber plantations I am aiming at. The river ford being crossed, another hour's ride brings me to Mr. Holloway's bungalow, perched on a leveled abutment on the hillside. Dry clothes and dinner are very welcome, and with the help of lounge chairs my good host and myself discussed rubber topics far into the night. Work on a rubber plantation starts early, so we were up betimes next morning to see the start of the tapping operations.

KEPITIGALLA ESTATE.

THERE are now about 1400 acres in rubber on Kepitigalla, of which 830 acres form the old estate and 570 are new clearings. This all lies along steep hillsides and faces due west. In this there is a peculiar advantage. The whole place being in the shade of the hill until a comparatively late hour of the morning, tapping can be carried on until 10 or 10.30 A. M. Kepitigalla was first and foremost a cacao estate, the rubber being planted with the primary object of giving shade to the cacao, with the thought that if rubber should prove a paying thing the trees would be there to produce it. The oldest trees were planted along the roads and ravines, and gradually throughout the cacao, so that now from certain elevated points one can look over a fine stretch of *Hevea* foliage, the rubber trees towerwell over the cacao. The rubber is planted through alternate lines of cacao 24 × 12 feet, and along the roads, ravines, etc., 12 × 12 feet. [This would give 155 and 330 rubber trees per acre, respectively.—THE EDITOR.]

The land has an elevation of from 600 to 2000 feet; the soil is of a generally rocky and in parts very rocky description, but the soil is particularly good, and goes down deep so that the rubber trees thrive well. In places they seem to be growing out of sheer rock and where the enormous taproot of the tree finds scope to grow is a puzzle. On one road which had to be widened the soil was dug away from the bank to a height of 5 feet, exposing to this length the great tap and thick surface roots of two *Heveas*, which now stand right out from the corner of the bank; but the trees apparently have not been in the least affected by this treatment.

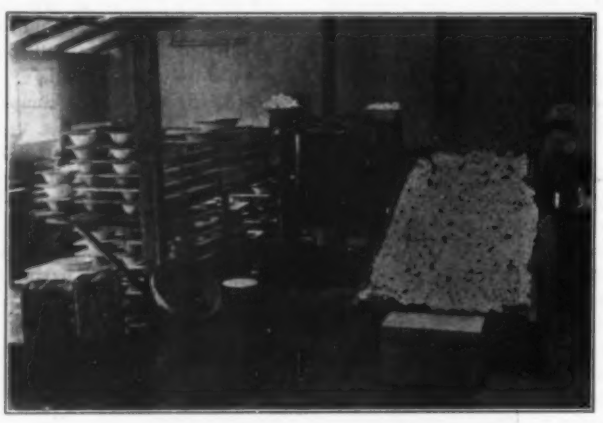
In fact, *Hevea Brasiliensis* in Ceylon seems to be impossible to kill. Killing a tree by overtapping has not yet been reported in the island; the more latex you extract the better the tree seems to flourish; trees uprooted and blown down by gales still thrive, yield rubber, and send up numerous strong shoots which in a few years develop into trunks big enough to tap. Diseased cacao pods are collected and burned in heaps on the roads through Kepitigalla and several trees have been badly burned by these fires. In some of these the wood has been burnt out

to the heartwood to a height of 6 feet, but the tree soon recovers; a splash of tar keeps out fungus spores, and the bark gradually closes over the gaping wound. No tree is tapped until it is at least of 20 inches girth at 3 feet from the ground, and the older trees are from 50 to 60 inches or more in circumference.

The labor on the estate is plentiful, being all Tamils from South India, and nowhere can there be found a better and cheaper agricultural laborer. The Sinhalese in the villages around are useful for felling and clearing jungle for new plantations, always on contract work, but they cannot be depended on and will take a few days' holiday whenever they feel inclined. The tapping system in vogue on Kepitigalla for several years is about the simplest and easiest imaginable, and is in consequence the best for the Tamil coolies, who after a little practice become very expert. Some of the best tappers are youngsters of 12 and 15 years.

TAPPING METHODS.

Mr. Holloway has always been in favor of single short obtuse V cuts, up and down the stem; according to its girth each tree carries 6, 8, or 10 cups at a single tapping. The trees are tapped twice during the morning and there is no evening tapping. This is very much in favor among the coolies, whose regular day's work is over by noon. At 6 A. M. the tapper starts his round and fixes the cups; at 8 to 9 o'clock he goes a second round, re-taps and affixes cups again; by 10.30 to 11 he is back at the factory with the tins of latex. Each gang of two coolies has 220 trees to tap, and taps 110 on alternate days; and, allowing resting time for the trees, each gang taps 440 to 500 trees per annum. This allows to two coolies 2½ acres per annum, or rather less than *one cooly per acre, per annum.* The Holloway tapping knife is an improved V cutting knife; it is heavier than the old knife and has movable blades; the V blade head is fastened to the handle by two small screws and nuts, and a blade when worn down after four months' use is easily replaced.



A CORNER OF THE NEW FACTORY.

Showing (1) Pans of Latex Coagulating into Biscuits; (2) A Michie-Golledge Coagulating Machine (with small bits of creamed rubber); and (3) Freshly Made Lace Rubber.

[Photograph by Mr. Etherington.]

It is usual in Ceylon to tap only the first 6 feet of the trunk up from the ground, except on very large trees. Mr. Holloway believes that the trunk may be profitably tapped to a much greater height; his trees, having their lower branches lopped off, show tall straight stems from 25 to 50 feet or more and he is experimenting as to how far up they may be tapped, going higher each year. At present after a tree has been thoroughly tapped for its first 6 feet for some years he goes higher and taps up to 12 feet, and this year is going up to 15 and 18 feet, and with excellent results. These are tapped once per annum with a series of single oblique cuts 8 to 10 inches long. Light ladders are used, and as many of the trees are on steep rocky places the tappers find it easier to make single oblique cuts, when clasping the tree with one arm for support, than the V cuts.

The tapping coolies work in gangs of two—the tapper and his assistant, who carries the cups and cans for latex and affixes the cups to the tree. Each day 24 gangs of tappers are at work on 110 trees, so that every two days 5280 rubber trees are tapped. A gang brings in sufficient latex each day to make about 30 biscuits and these being 8 or 9 to the pound, work out at 3¼ pounds dry rubber collected per gang every day.

A RUBBER COAGULATING "FACTORY."

THE tapper on arriving at the factory with his latex has to strain it, place it in the coagulating pans, and set these out to coagulate. Each man's latex is kept separate and numbered, so that it can at once be seen if a man is doing his work properly, and if not he is given a "half name" for his day's work. The coagulated biscuits are next day passed through a mangle and then sent into the hot air drying room, with a temperature of 100° to 105°. The rubber is practically dry after one day there, and is then passed into the drying and store room where it remains until several thousand pounds are ready to be graded according to color and packed for transport to Colombo. The roof of the factory is corrugated iron and this keeps up the temperature; the biscuits are dried by hanging on wires stretched along below the roof about 2 inches apart, and the sight of the four store rooms, 72 × 24 feet, each literally canopied with rubber, and more round the sides and down the middle on wire shelves, was an interesting spectacle. All the rubber until the end of 1905 is sold on contract to a Colombo firm at a price well up to the London average for the year, and that is over $1* per pound.

The new rubber factory is a cement floored building fitted with power for driving any machinery. Stands are fitted for holding the pans of coagulating latex, and in it are a "Michie-Golledge" coagulating machine for making the now fairly well known "worm" rubber; a "Dickson" coagulating machine, for coagulating by the smoke process; and a "lace rubber" machine of Mr. Holloway's own invention for turning out coagulated rubber in thin lace form for very rapid drying. A big rubber washing machine is shortly to arrive from the Malay States.

A COAGULATING MACHINE.

The Michie-Golledge machine is a rapid coagulating engine the invention of two Englishmen in Ceylon—Mr. D. Michie, head of the engineering department of a large Colombo firm, and Mr. G. H. Golledge, manager of the large Gikiyanakande rubber estate in the Kalutara district. These gentlemen have been working at it for a long time and now it is on the market although improvements will probably be made. Cemented into the factory floor the machine stands some 4 feet high; it is composed of a large iron drum inside of which another drum, holding the latex, is rapidly revolved. This inner drum has 4 blades running around the inside, and in the bottom is a waste pipe for carrying off the "mother latex" or waste water after the rubber is coagulated. A leather belt running from the axle of the revolving drum to a large wheel gives the power, and the wheel

* Our correspondent refers to the American dollar, and gives no other figures for values. Mr. Holloway wrote sometime ago to *The Times of Ceylon* that rubber could be delivered in Colombo under 50 rupee cents [=16.4 cents, gold] per pound and was then selling in Colombo at 4.15 and 4.20 rupees [=$1.34 to $1.36 per pound], since which time higher prices have been obtained in that market.—THE EDITOR.

is turned by two coolies. The late Dr. C. O. Weber long tried to coagulate latex by a centrifugal machine, and finally declared that it could not be done. The Michie-Golledge machine has been termed a centrifugal machine, but this is erroneous, because *centrifugal* is often popularly understood to mean merely a revolutionary motion. The Michie-Golledge machine is a *centripetal* machine; instead of fleeing from the center of the machine, the globules of Caoutchouc in the latex are induced to *seek the center*, the narrow blades above mentioned rushing the mass of coagulating rubber into the center where it gradually comes out a creamy spongy mass.

The latex on arriving from the plantation at the factory is diluted with four times its bulk of cold water, and for every gallon of diluted latex one drachm of acetic acid is added. Up to 6 gallons or more can be coagulated at a time, but probably when more estates and trees have come to maturity large sized machines, holding 20 to 50 gallons or more, will be built, to be worked by steam or water power.

The latex with the acid having been placed in the drum the machine is set at work, revolving rapidly at first and then slowing down as the latex is nearly coagulated. A large amount of froth comes up on the latex at first, this seeming to differ in quantity according to the age of the tree, the length of time it has been tapped, and so on. Also the same considerations seem to affect slightly the time coagulation takes. In from 6 to 8 minutes the latex is coagulated and appears as a huge mass of white sponge in the middle of the machine, of the consistency of thick clotted cream. This freshly coagulated rubber is very porous and full of water. The "sponge" is then placed on a mangle and passed rapidly through it; the surplus water is pressed out, but the rubber must not be too heavily pressed, as this tends to lessen its porosity and consequent rapid drying and the very object of the machine and method is rapidity in turning out dry rubber ready for shipment. After mangling, the rubber is ready to be cut up by shears or clipping knives into small shreds 8 inches long, now popularly known in the East and on the London market as "worms."

DRYING ROOM NO. 4.
[Ceylon Biscuits Suspended on Wires, or Laid on Frames to Dry.]
[Photograph by Mr. Etherington.]

There is room for improvement in the machine, as the clipping process by hand is slow and laborious. I can conceive of a rolling and clipping machine in one; the rubber coming out of the rollers in a continuous thin sheet and automatically clipped into shreds by a chopping blade.

This machine does not *wash* the rubber, as in the case of the washing machine employed in the Federated Malay States, but it removes all mechanical impurities. The cut up "worms" are exposed to currents of hot air in the factory, where they are spread out on tables and the rubber is perfectly dry and fit for packing in 30 hours. It may be stated that "worm" rubber has fetched top prices in the London market.

MR. HOLLOWAY'S LACE RUBBER MACHINE.

THE "lace" rubber machine is of Mr. Francis Holloway's own invention. The latex is very rapidly coagulated and comes out of the machine with nearly all the water pressed out of it by rollers. It is turned out in a continuous sheet, 12 inches wide, and very thin and torn and broken into holes, which give it the name of "lace rubber." While the writer was at the factory latex was brought in fresh from the *Hevea* trees, coagulated and turned out as "lace" by the machine and dried by currents of air, at a temperature of 90° to 95° and completely dried ready for packing for shipment in 19 hours. The machine feeds the "lace" on to wire frames; it is cut into segments 6 feet long to fit these frames and then rapidly dried on them. When dry the rubber is of a fine golden amber color, with a sweet fresh odor. The pressed samples in the factory storeroom ready for packing looked when unfolded like huge blankets of lace rubber. It can also when dry be compressed into almost solid blocks if required, and in bulk its own weight compresses it; but as "blankets" it is readily examined and its purity and color are at once obvious. Samples are being sent to the London market. It is one of the most expeditious methods of making and drying rubber for market artificially yet brought out.

RUBBER SMOKING APPARATUS.

The third machine in the Kepitigalla factory is the Dickson coagulating machine, the invention of Mr. R. C. Dickson, of Colombo. This coagulates the rubber by a smoking process, thereby closely copying the methods of the Brazilian *seringueiros*, only doing the business more scientifically and expeditiously, and therefore more economically. The machine is a coagulator and drier. It consists of a small charcoal furnace on the top of which is a smoke box containing a large revolving drum. Between the furnace and the smoke box is a set of baffle plates to divert fumes from the furnace and prevent flames or sparks passing into the smoke box. At one side of the smoke box is a shallow pan for receiving the fresh latex; and in the pan a small roller, partly immersed, works in contact with the surface of the revolving drum. The smoke fumes pass through the baffle plates round the large revolving drum and out of a chimney in the top of the smoke box. The small roller is turned by hand or machine power, and being in contact with the big drum revolves it, and at the same time coats it with a thin film of latex. This thin film coagulates and dries in the smoke as the drum revolves. The process is continued until the rubber is coagulated, film by film, on the drum, and a thick deposit of rubber is formed. A damper is then closed between the smoke box and the furnace; the rubber on the drum is slit across with a knife and unrolled in a long sheet. The antiseptic properties of the smoke tend to cure and preserve the rubber, and the sheet is dry right through. The machine is a cheap one, and the inventor has in mind a number of the machines erected in small sheds over the rubber estate.

These three machines are all in the Kepitigalla factory, which is one of the most up-to-date and well equipped in the East. The factory and huge drying and storerooms make it about the largest plantation rubber factory in the world.

The washing machine had not arrived at Kepitigalla at the time of my visit; it will probably arrive in sections very soon, as most Kepitigalla purchases do, on the back of an elephant.

This machine thoroughly washes and cleanses the rubber, turning it out in a thin, semi transparent sheet, punched all over and giving it the appearance of crepe—hence the name of rubber treated by the machine. An advantage with it is that scrap and dirty rubber taken from the trees can be put through it and turned out perfectly clean and as good as fresh biscuits.* Besides the tapping knives and "lace machine," Mr. Holloway has invented a "rubber tapping guide." It consists of a pole 12 feet long with a row of holes one foot apart and a peg to fit into them. On the pole a sheet of tin fits and slides readily up and down and is fixable at any of these holes with the iron peg through it. This guide, held against the tree, gives exactly the positions and is a rule for cutting half or full "herring bone" cuts. It is quite evident that whatever tapping system is adopted, to be economic, the cuts must be made regularly and correctly; this the Tamil coolie cannot do himself, but given the Holloway guide he cannot easily go wrong. Further, held the other way up, the guide gives correct positions and marks for the spiral cutting method, one which has recently been brought forward in Ceylon by Mr. Charles Northway, a rubber planter of experience in the southern province, and a system which has given astonishing results. It is well worth giving a few particulars here.

SPIRAL TAPPING.

THE spiral tapping system is the result of experiments carried on by two planters, Messrs. Charles Northway and E. D. Bowman, on Devitural estate, in the Southern province, Ceylon, who recognized the need of an economical and scientific method of tapping *Hevea Brasiliensis*.

It is desirable that the bark be removed from the tree as slowly as possible, at the same time yielding the greatest flow of latex consistent with no harm to the tree. Though it is now known that the tree will stand a tremendous lot of ill treatment in Ceylon and yet survive and yield well, yet the tree has a limit of production of latex, and when that is reached its flow diminishes and a rest for recuperation is required. Further, under scientific tapping, the bark must be renewed evenly over the trunk so as to offer a new surface which is smooth and easily retapped, and the renewed bark must be mature and full of laticiferous cells by the time it has to be tapped a second or third time. All these essentials are found in the use of the spiral system. In this method a series of spiral cuts corkscrewing up the tree are made in the bark, each channel terminating at the base of the trunk.

For a tree of 18 inches girth, 3 feet from the ground (at which size the commencement of tapping is recommended), two spirals are cut, starting at opposite sides of the trunk, and only encircling the trunk once. As the girth of the tree increases, more spirals can be cut between and parallel to these, so that a large tree, of say 60 inches girth, will have 5 spiral channels one foot apart running up the tree to 12 or 15 feet high or more. The channels are cut at an angle of 45 degrees—never more obtuse, and even more acute in the case of young trees to allow for the expansion of the trunk. None of the various tapping tools and knives previously in use in Ceylon or elsewhere was suited to this system, and the producers of the system had also to evolve a knife to suit the requirements. This is called the "Bowman-Northway" knife—or knives, rather, as more than one is required.

The spiral tapping must be carefully carried out to secure the fullest results and to be really economic. It is important that the first cut, which is thereafter to be continually reopened, should be correctly done, and that the corkscrew curves be regular and parallel. To do thist he outlines of the initial cuts are carefully marked on the tree with a sheet tin guide and stencil ink. The inventors lay stress on this.

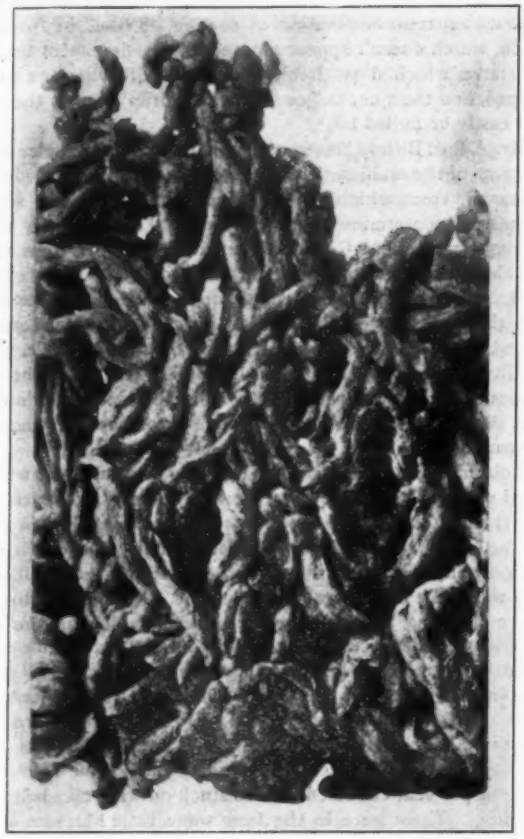
The first narrow channel is cut with the Bowman-Northway No. 1 knife, which gouges out a narrow channel. The latex runs round the spiral and is collected at the base of the tree in cups resting on the ground. At the end of each cut a little tin spout is pushed into the tree; this always remains there, and does away with the constant pushing of the cups into the bark as in the older V system, and thereby needlessly wounding the bark. If required, to make the latex flow rapidly the whole

SPIRAL SYSTEM OF TAPPING.†

HIGH TAPPING OF "HEVEA."

*The machine referred to, made by the Federated Engineering Co., Limited, (Kuala Lumpur), was designed by their manager, Mr. Dearie Russell, and has been in practical use on Malay States rubber plantations for more than a year, having the warm approval of Mr. P. J. Burgess, the government rubber expert.—THE EDITOR.

†This is a view of a *Hevea* tree on Devitural estate, in Ceylon, yielding at the rate of 16 pounds per year. The coolies in the picture had just started, and had not got down to the lower trunk when the photograph was taken. The photographic negative was absolutely untouched.



"WORM RUBBER."
[Specimen from Ceylon, obtained in the American market and photographed by THE INDIA RUBBER WORLD.]

length of long spiral cuts, a little water is poured into the top of the cut by the tapper.

In reopening the cut a very thin slice of bark is shaved off the lower edge of the open wound—for healing of the wound always takes place more rapidly from above downwards. The finer the shaving taken off the better, for all that is required is to open the laticiferous cells and the less bark removed each time the more economical is the tapping. The first knife will not do this. Here comes into use the Bowman-Northway No. 2 knife, or paring knife. This knife has a fine steel spring which presses against the open wound of the trunk and prevents the *Cambium* being pierced, while the sharp edge at the side shaves off a very thin layer of latex and reopens the cells containing the milk.

Alternately with this paring knife is used the "Pricker." This is like a revolving wheel spur on a handle, and is run along the wound close to the lower edge of the cut. It produces a series of pricks right along the cut. The flow of latex produced is no less than that made by the knife; but the primary object is to bleed the tree without further bark removal. The trees are tapped on alternate days, and also alternately with the knife and the pricker. By this means one inch in width of bark is removed per month; the trees are tapped one month and then given one month's rest, so that in one year—*i. e.*, six months' actual tapping—6 inches of bark are cut away, and thus it takes exactly two years to cut down the trunk until the old wound of the parallel spiral below is met. By that time the bark is renewed perfectly smoothly and evenly, is full of latex, and quite ready to be tapped again. This has all been proved in practical work on Deviturai estate.

YIELD OF RUBBER.

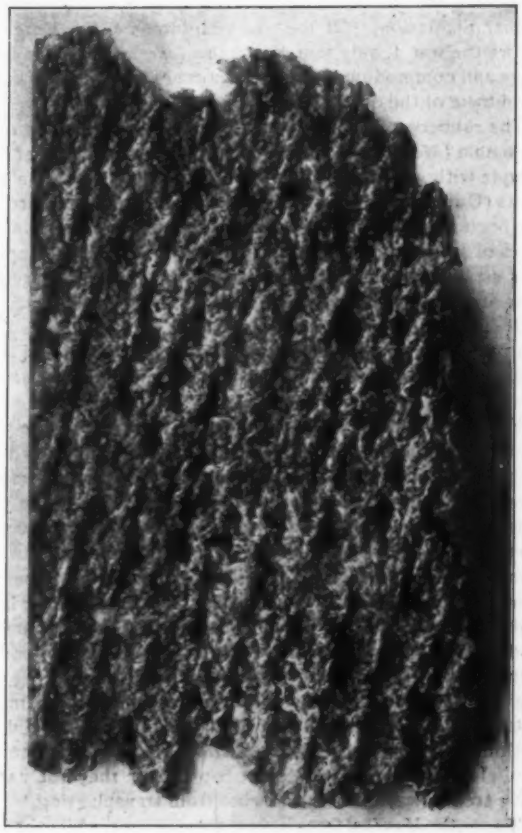
THE yields obtained by this method are surprising, and have totally upset all former calculations. Where formerly one pound of rubber per annum was considered a fair yield, now five pounds can be obtained. In 1903, with the V system of tapping, 248 trees gave 240 pounds of rubber. Tapped in 1904, on the spiral system, these 248 trees (rising 11 years old) gave 65 pounds the first month, and in 3 months gave 392 pounds rubber; and in January–September, 1905, the same 248 trees gave 1317 pounds rubber, by spiral tapping.

On a visit to the Deviturai estate in October, 1905, the writer was privileged to copy the following extract from the estate report for September:

> The year's tapping on the new system closed with this month, with an average yield of just over 5 pounds per tree. The 8 separate trees tapped 8 months yielded 14 pounds each, and the 40 young trees in 4 months tapping gave 1½ pounds each.

The "40 young trees" mentioned were being tapped for the first time, and they gave total yields up to 19 and 21 pounds per month. The "8 separate trees" mentioned had an average girth of 42 inches, and in March, April, and May respectively they gave a yield of 14, 19, and 17 pounds of rubber, and in September (after having been rested during the seed crop) they gave 18 pounds for the month. Rising 12 years old, these trees have given an average of 16 pounds per tree per year.

The spiral system requires very careful tapping work, and



"LACE" OR "CREPE" RUBBER.
[Specimen from Ceylon, obtained in the American market and photographed by THE INDIA RUBBER WORLD.]

according to the girth of the tree an expert cooly can fully tap 30 to 40 trees per day (morning tapping only), bring in the latex to the factory, strain, and coagulate it, mangle the rubber, and be entirely responsible for turning it out into dry sheet rubber ready for packing and shipment, in the shape in which it reaches the London market.

There is very little scrap with this system, and all that there is has to be carefully pulled off the wound before the pricker can be used, so that no scrap is wasted. The rubber turned out is some of the finest ever seen in Ceylon. Such yields as these, and such excellent results with the trees are unequaled, and there need be no hesitation in stating that the spiral system will be widely taken up on plantations. Already on well known Ceylon estates it has been started, and also in the Federated Malay States. Undoubtedly this is one of the most important forward steps made in the industry for a considerable time.

PLANTING "CEARA" RUBBER IN COLOMBIA.

BY HENRY G. GRANGER.

[TRANSLATION of a Report of a Visit to "La Barrigona," to his Excellency Dr. Modesto Garces, Minister of Public Works of Colombia.]

AT the beginning of the month I visited the *hacienda* "La Barrigona,"* property of Messrs. Simon and Ignacio de la Torre, which occupies a large area on the banks of the Magdalena, one hour's riding from Cambao. It includes pastures capable, according to the manager, Señor Antonio Padellia, of sustaining 3000 cattle; a large plantain patch, corn, yuca, and a rubber plantation. Of the many buildings which were there before the war I only found left the *bodega* and main house, large and commodious, with wide porches, a testimonial of the good taste of the owners.

The rubber plantation is new and of its class the only one in Colombia (*Manihot Glaziovii*, producer of "white rubber"). A sample without any preparation was quoted in London at 90 cents (United States gold) per pound, some months since. At the beginning of the war (or in 1900) they planted some 500 trees of seeds imported from Ceylon. When the encampment was established there the soldiers cut down the little trees for tent stretchers, leaving only some 25, which are to-day very well developed; some being more than 12 inches thick in the trunk. They are planted approximately at 5 meters [=16½ feet] apart, the same distance of planting *Castilloa elastica* in Chocó.

From the seeds of these trees they have planted some 30,000 more trees at a distance of about only 2 meters apart, which is a good thing to prevent weeds, although this renders impossible the complete development of all of the trees. These 30,000 trees embrace all sizes, since there are from only a few weeks up to two years. As the trees yield seeds from one year old, a remarkable point even in regard to this class of rubber; the ground is completely covered with little trees, which for lack of light and space are only about a foot high. The seeds are hard and about the size of an Antioquian bean and remain good, as I have been informed, more than a year without planting them, which is undoubtedly an important advantage, considering that in other places, as in the Chocó, if you don't make seed beds within a few days of the seeds [*Castilloa*] having fallen, they are lost, either because they become too dry or they rot, and the little trees always suffer somewhat from transplanting.

The little *Manihot* trees have a smooth bark, while the larger ones (or from 4 inches in diameter up) have the bark turned up with an apparent inclination of peeling off like the Northern birch, which doesn't appear to me to be a detriment because the latex which flows freely always falls off when the tree is tapped, and the "chaza," or that which dries over on the bark, can easily be pulled off.

Mr. Alford Bishop Mason has spoken to me of this plantation and was of the opinion that rubber could be extracted from the 2 year old trees, which have a diameter in the trunk of some 4 inches. To determine this point a long and careful study would be required. In the Chocó the cultivated rubber trees which are bled are what is called there "borrosos," that is to say, that their latex is thick and coagulates on the bark of the tree without the necessity of gathering it in cans or vessels, such as have to be used with the *Hevea Brasiliensis* for example, which facilitates greatly gathering it, although by reason of the little pieces of bark which remain adhered, the price is diminished. For this reason, in the Chocó in some cases they tap the trees 3 years old.

I observed in "La Barrigona" among various trees which I tried with my belt knife that there were only two which gave the thick latex; the others, even those only one year old yielded the latex freely, but it would be necessary to collect it in cans, which would not pay for the trouble in view of the small quantity which the little trees yield at a time. If one could discover the conditions, if there are such, under which all the trees should produce thick latex, then it would be practicable to tap small trees, making them produce from, as the total of many tappings, ½ pound up per year. Otherwise it is necessary to wait until the trees are some 5 years old; judging from the quantity which I saw that they bled, even from cuts made on top of old cicatrices, they should easily give from 1 to 2 pounds per year collected in cans stuck on with clay below the tapping. There were in the farm some little hatchets with a blade only an inch long and very thick, which they had gotten to tap the trees, these are of no use. The knife to tap rubber trees should have a long thin blade with a fender to avoid passing the bark.

I have read in the Orient they extract rubber even from the leaves of some rubber trees by means of presses, and I noted at "La Barrigona" that on cutting or breaking a number of the leaves of the small trees which are below the large ones that they bled little drops of latex. This point is very important and should be experimented on with a hand mill such as can be obtained, with three rollers for grinding cane, from George L. Squires & Co., Buffalo, United States, and others. If it yields a sufficient quantity of latex then a steam mill could be installed with a certainty of two crops a year of a plant whose latex condensed is worth 90 cents per pound instead of 2 cents per pound for sugar; with a certainty that the cultivation will cost nothing and that the trees which drop the seeds in such short time and abundance that they will constitute a source of income.

Herr Franz Clouth, a notable authority on rubber matters, says that the hillsides should be preferred for the cultivation of *Manihot Glaziovii*, where it yields more. It would be very advisable that the Messrs. de la Torre should give orders for the planting of some thousands of trees on the hillsides back of the *hacienda*. Within three years this rubber plantation will have a large value for its owners, and at present is of much importance to Colombia by reason of the abundance of seeds which it yields and which could surely be obtained at a moderate cost from its owners by all who desire to follow their good example in accordance with the present Colombian program of "Peace and Work."

Cartagena, Colombia, May, 1905.

* The location of this *hacienda* is shown on a map in THE INDIA RUBBER WORLD, December 1, 1905 (page 75).—THE EDITOR.

THE DEFENSE OF THE CONGO ADMINISTRATION.

THE criticisms of the administration of the Congo Free State which have been so persistent for the past two or three years, particularly in England, have been noticed from time to time in THE INDIA RUBBER WORLD, with the qualification always that the concern of the rubber interest in the matter is wholly apart from world politics. In other words, this being purely a technical and trade journal, the interests which it represents most intimately must consider the Congo question primarily with regard to the reckless exhaustion of the rubber resources of the Congo which has been in progress for the past decade and is now nearing a climax. This being the only reason for our referring to the matter at all, the charges against the Congo administration which have been the text for such voluminous issues from the English press, not to mention German and other publications on the subject, have never been fully set forth in these pages. In view of what has been published in this Journal heretofore, however, it seems proper to refer here to a report recently published, of a commission of enquiry created on July 23, 1904, by Leopold II, king sovereign of the Congo Free State, to consider the abuses under which the natives of the Congo were alleged to be suffering and to decide upon such reforms as might be necessary to check such abuses. The full report of the committee, dated October 30, 1905, fills 150 pages of the *Bulletin Officiel de l'Etat Independant du Congo*, and is too lengthy even to be summarized in these columns. The details, however, which relate most definitely to the rubber interest will have brief attention.

LEOPOLD II.
King of the Belgians; King Sovereign of the Congo Free State.

A considerable section of the report relates to the products of the *Domaine de la Couronne* (the domain of the crown), which comprises by far the larger portion of the Free State and is administered as a national reserve. The most important of these products from a commercial standpoint thus far has been Caoutchouc, and the reference to this commodity in the report of the committee is here translated:

There is no doubt that the working of a rubber forest, continued for a term of years, results in exhausting the supply in the neighborhood of the native villages.

This fact explains the reluctance of the negro to gathering the rubber sap, an industry which is not in itself toilsome. For the most part he is obliged, every fortnight, to make a journey of one or two days, and sometimes more, to reach a place where he can find a sufficient growth of the rubber plant. There, for a number of days, he leads a miserable existence. He is obliged to improvise a shelter which evidently cannot be equal to his hut. He is deprived of his accustomed food, he is unaccompanied by his wife, exposed to the inclemency of the weather and to the attacks of wild beasts. His harvest he must carry to a station of the government or of the company, and not until then can he return to the village, where he can stay only two or three days, as another maturing payment pursues him.

The result is that whatever may be his industry in the rubber forest, the greater part of his days, by reason of these journeyings, is spent in gathering rubber sap. It is hardly necessary to say that this state of affairs is a flagrant violation of the law which requires of the native 40 hours of labor per month. From our point of view, the only way to adjust this difference between the requirements of trade and the text and spirit of the law would be to let more time elapse between the periods when the native must make his returns. In this way the time lost in going to and from his labor would not be so great and the time required of him would come nearer to the 40 hours per mouth prescribed by law, especially if the quantity of rubber which he is required to furnish were more equitably fixed and did not reach a maximum rarely attained, and which we believe to be excessive. It might be objected that improvidence is a characteristic trait of the native, and that he would put off until the last moment his departure in quest of the quantity of rubber exacted of him. We think, however, it would be possible to require of the native a discharge of his debt to the state every three months, and then at the proper time the whites could remind the shiftless negro of his duty. His stay in the forest being thus more prolonged, but less frequent, the native would doubtless find it expedient to construct a more suitable shelter, and to take his wife along with him, and she would prepare for him his accustomed food. Moreover, in the opinion of the commission the imposts being necessarily collective, on account of the difficulty of reaching individuals, the inconvenience resulting from the intervals between the collections would be greatly diminished, and moreover the personal convenience of the natives could be taken more into account.

It is evident that if no tax were levied it would be necessary, in calculating the hours of work, to take into account the time spent by the laborer in getting to and from his work.

What is even more pertinent to the Caoutchouc interest, however, is the section of the report headed "*Les Concessions*," in which is discussed the relation of the *concessionaires* to the state, and this of course involves the conduct of the Belgian trading companies whose operations in rubber on the Congo for several years past have resulted in almost fabulous, though now declining, profits. This section alone is much too lengthy for space here in full, but in the paragraphs which follow an attempt has been made to present a summary which shall reflect, as accurately as possible the spirit of the official report, which is, of course, in French:

"As we have seen, it is in those parts of the country worked by companies having a concession that the most serious abuses have occurred. By *concession* we understand a right given to commercial companies to gather, for their exclusive profit, certain products of the state domain. Some of the companies own the lands which they work. In return for the concession, the state receives a considerable part (generally one half) of the profits.

"We are far from contesting the power of the state to concede rights in certain parts of its domain; at times circumstances have made this step necessary. The state, having neither the agents nor the resources necessary, was glad to avail itself of private capital. The laziness of the natives and their few personal wants made it impossible to work the forests (after those

lying near the villages had been exhausted) except by resorting to forced labor.

"To enable the companies to go on, the state, which exacted of the natives a tax in kind, or in labor, delegated a part of its powers to the companies, giving them the right to compel the blacks to gather certain quantities of rubber and some other commodities. This right, at first tacit, then express, was made legal by the decree of November 18, 1903, which set the tax in kind for the natives of the territories at 40 hours of labor each month. Previous to this legislative act the different companies had compelled the natives to harvest the products of the country, for their benefit, but they had kept up the principle of payment. It is the abuse of the right of exacting labor that has worked the greatest wrongs in the country.

"The quantity of a product required was not fixed by law but was left to the discretion of the agents of the companies. This vague determination of quantity still exists, under the law of November, 1903. Inspectors appointed by the state to see that the companies did not abuse their rights were too depend, ent upon the companies themselves to be very critical. Even magistrates sent in to investigate complaints were forced to travel on the boats of the companies and accept the hospitality of their agents.

"The result was that the companies looked upon themselves as masters in their territory and the state laws were practically nullified. In certain parts where no concession has been given. the native gathers the products for commercial companies under indirect compulsion. These regions are those in which the state, by the decree of October 30, 1892, gave over to private individuals the gathering of rubber. In the greater part of the Kasai basin, numerous companies, working under this concession, have incorporated themselves into a 'trust' for the purpose of avoiding competition. The 'trust' is known as the Compagnie du Kasai. It has no power to levy a tax in kind and hence can gather rubber only by dealing directly with the native.

"The indirect compulsion mentioned above is brought about in this way. The native is compelled to pay a state tax in local money called *croisette*, which can be obtained only of the agents of the company, in payment for rubber. The agent, aware that the native will not work after he has enough *croisette* to pay his tax, contrives to get as much of this rubber away from him as he can in exchange for other commodities. The price of rubber in *croisette* is not fixed by law, but is more or less a matter of bargain. The net result of all this to the disadvantage of the native.

"In other sections, particularly Lulonga, and in the region between the mouth of the Lomani and Stanleyville, the agent buys the rubber direct from the native. The latter is subject to no tax, yet he is obliged to gather rubber for the agent. At Stanleyville the negroes proposed to the agent of a Dutch house to furnish rubber without pay, provided the quantity required of them were diminished by one half.

"The conditions are better where there is competition, than where everything is in the hands of a single company. In Lulonga force is resorted to and the investigating committee were told by the agents themselves that the whip is used habitually. We do not believe it possible, except perhaps in the Kasai and certain parts of the eastern provinces to produce, from the free labor of the native, a regular supply of rubber. Nevertheless, we think that the state might, in certain particular regions, give up its rights to the products of the domain; allow companies to deal directly with the native, freeing the latter from all tax and leaving him to work only for pay. This would practically be testing the result which would have followed the enforcement of the decree of October 30, 1892. The result of this attempt might, even if it proved a failure, furnish some useful suggestions for the future. In order that the experiment might not be fruitless the state should see to it that no constraint, even moral, be put upon the native. It ought also to encourage the establishment of a large number of merchants, even giving them, at a very low price, the land necessary for putting up factories."

It may be said that on the whole the report of the committee on enquiry confirms the charges of abuses in many respects, but absolves the government of responsibility for them, and it is to be noted further that the sovereign has appointed a new commission to undertake the reforming of abuses so far as may be within the power of the government.

The English critics of the Belgian government of the Congo state decline to accept the report of King Leopold's commission as a refutation of the charges which led to its creation, and one of the most notable of their number, Mr. E. D. Morel, in his journal, *The West African Mail*, fails to see, in the composition of the reform commission, any promise of the righting of the wrongs complained of. At the same time, the journal *La Vérité sur le Congo*, maintained for the defense of the Belgian cause, presents extracts from many reputable newspapers, in different countries, which have given the official report an entirely favorable reception.

THE APPOINTMENT OF AN AMERICAN.

[FROM THE NEW YORK "SUN," DECEMBER 11.]

KING LEOPOLD, the sovereign of the Congo Free State, has appointed R. Dorsey Mohun, an American, as director of the ABIR Congo company, one of the largest rubber concerns in that country. This company was the only commercial society in the state that was mentioned by name in the recent voluminous report of the Congo commission as having treated the natives with brutality. "In the posts of the ABIR company in the Mongalla district," says the report, "the imprisonment of women as hostages, flogging to excess, and various acts of brutality are not contested. It is the black spot on the history of Central African settlement."

Mr. Mohun was formerly our commercial agent at Loanda and later at Boma, the capital of the Congo State. In Central Africa he saw a large part of the war in which the black soldiers of the state, under their white officers, drove out and away the Arab slave raiders and put an end to slave catching in that large domain. When he came home he visited *The Sun* office and told of some of the stirring incidents in that long fight against the most terrible of African evils.

King Leopold has appointed a new commission to carry out the reforms recommended by the eminent body whose report is now in his hands. The appointment of Mr. Mohun, who has large executive ability and is thoroughly familiar with African conditions, to a place of unusual opportunity for the correction of past abuses, is one of the first steps taken.

"Commercial companies," said the commission's report, "should never be permitted to carry on armed expeditions, as was notably the case with the ABIR company." The American undoubtedly has a fine field before him in which to inculcate humanity as well as to stimulate commerce.

THE Dresden *Gummi-Zeitung* reports: "There is a lively demand for ladies' rubber cloaks this fall. The only complaint among manufacturers is that the grades of wool used for such cloaks have very considerably advanced in price, and that this is proving rather detrimental to the volume of sales."

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

FOR several years, it will be remembered, the National cycle show at the Crystal Palace has coincided with the Stanley, at the Agricultural Hall. This season there was only the Stanley show, but it found a powerful rival in the affections of the public in the great motor show at Olympia. I have no official figures to show how the attendance at the Agricultural Hall compared with former years, but from my own observations and from what I gathered from exhibitors I imagine that there was a distinct falling off. Of course there is more novelty about the motor business, which is yet in its infancy, and cycle shows cannot compete in this respect. Then the raucous tones of the gramophone and the elocutionary efforts of the purveyors of boot polish strike one as being somewhat foreign to the show as a business venture. The explanation of the presence of gramophones, toys, and other goods quite unconnected with cycling is that they are sold by cycle dealers in the dull season and form part and parcel of their regular stock in trade. The rubber manufacturing firms represented, in addition to those exhibiting at Olympia, were the Avon India-Rubber Co., Limited, of Melkeham; F. Reddaway & Co., of Manchester (of Camel tire fame); W. & A. Bates, Limited, of Leicester; Capon Heaton & Co.; and the Gorton Rubber Co. The Silvertown company, The North British, Moseley's, the Continental, and Michelin were in evidence at both shows. To some extent the two shows overlapped, as there were motor tires to be seen at the Agricultural Hall, and the minor hall was wholly given up to motor cars, a fact probably explained by failure to obtain space at Olympia. The rapid advance of the motor car has caused the attention of inventors to be devoted to its interests to an extent which has caused cycling improvements to be somewhat neglected. A great deal for instance is heard of side slip contrivances for motor tires, but the matter is still an urgent one with regard to cycle tires, the various trials made by the authorities not having shown that the desired perfection has been attained.

THE STANLEY SHOW.

S. AXELROD has an interesting paper on this subject in a recent issue of the *Gummi-Zeitung*. Without following the author through all his figures, I may be allowed to remark on one or two points. In case any misapprehension should exist, I might emphasize that benzine with an *i* is quite distinct from benzine with an *e*. The former is a derivative or more correctly a constituent of petroleum while the latter is derived from coal tar. It is recognized that the latter has the better solvent action and one notices in motoring papers notices warning tire users that petrol cannot be used instead of benzene in cases where a semi solution of the rubber is desired. But to return to the main topic under notice, in a column showing the resinous constituents of the various rubbers experimented with, the figure for fine Pará hard cure is 3.4 per cent. while that for Ceylon Pará sheets is 8.6 per cent. The first is higher than is usually supposed, but the latter if really representative shows the Ceylon rubber to compare unfavorably with the native product in a direction which has not hitherto been so clearly demonstrated. Possibly the author's sample came from immature trees and must not be considered as representative. Except in the Pará figures there is nothing else in the column which is different to what I should have expected. The paper as a whole has a scientific rather than a practical interest, and it is doubtful, to say the least of it, whether the ordinary works manager will stop by the way to ponder on the following sentence: "The degree of viscosity (n) and the percentage composition of the solution (p) are connected by the equation $n\text{-}c.p.$, where c is a constant depending on the kind of rubber, and r the tangent of the angle which the curve drawn to the logarithms of the figures of the viscosity tables makes with the horizontal."

SOLUBILITY OF RUBBER IN BENZINE.

THE managing director informs me that the newspaper reports concerning the fire which occurred at the company's reclaimed rubber works at New Mills near Stockport, in November, were much exaggerated. The damage done only amounted to a little more than £1, and consequently no interference to the business resulted. Taking the opportunity afforded me of referring to business matters generally, I learned that it has been the object of late years to reclaim without the use of oil, and was shown some good quality rubber which was said to contain no oil at all. Of course oil has only been used because of its physical help in agglomerating the particles of vulcanized rubber, and if it can be dispensed with the product should show increased tenacity.

MESSRS. G. H. SCOTT & CO., LIMITED.

THE recent publication in the London papers of the name of Mr. T. Hancock Nunn, as a member of the Royal commission on the Poor laws has led several people to assume that the gentleman named is identical with the Mr. J. Hancock Nunn, who is proprietor of the Vulcanized Rubber Works at 266 Goswell road, London. This, however, I may say is not the case, though I am not prepared to say that there is no family connection. The trading name of the Goswell road rubber works is James Lyne Hancock, the present proprietorship being as above mentioned in the hands of Mr. J. Hancock Nunn. The name will be familiar to readers of Dickens, as it was from a local habitation that Mr. Pickwick, on looking out of the window remarked that Goswell street was on his right, Goswell street was on his left, and the opposite side of Goswell street was over the way. The business dates from 1820, its original founder being Thomas Hancock, of familiar memory in the trade. It can therefore claim to be the oldest established rubber business in the world, though only beating in this respect Messrs. Charles Macintosh & Co. by three years.

MR. HANCOCK NUNN.

THE introduction of the rubber cored golf ball has transferred a good deal of business from the Gutta-percha manufacturers to the elastic thread makers. At first ordinary elastic thread was used; of late however a large demand has arisen for a broader count. This is made in the same way as elastic thread, that is, by calendering the rubber and sulphur dough on sheets. These are then vulcanized in steam, stripped, made into rolls and cut to the desired width of strip by the lathe. This material is now made by the ton and is noteworthy if only as one of the few new articles which the trade has been called upon so supply of late years. In general appearance this strip resembles what is sold as tape for electrical purposes, though this latter is unvulcanized. It is a common idea that the advent of the rubber cored golf ball has practically done away with the use of Gutta-percha in this connection. This, however, is not strictly true, as some balls at any rate contain a good deal more gutta than rubber

GOLF BALL RUBBER.

by weight. A mechanical analysis I recently made of one showed that out of a total weight of 33 grams rather less than 10 grams was due to the rubber strip. In this case there was a solid core as well as outer cover of gutta. I notice in a recent patent of the Perfect Golf Ball Co. that it is proposed to make the cover of Gutta-percha tape, so as to obtain more perfect adhesion to the core.

DANIELS'S PACKING.

IMPROVEMENTS and increased competition have continually to be reported in the engine packing branch. Of late years American packings have been increasingly exploited in England, most of them possessing certain claims to novelty which attract the steam users' interest. My attention has lately been drawn to Daniels's "P. P. P." packing, made solely by the Quaker City Rubber Co., whose representatives in Great Britain are Ronald Trist & Co., of Coronation House, Lloyds avenue, London, E. C. From all appearances India-rubber, asbestos, plumbago, and other common constituents of steam packings enter into its composition, but I understand that the chief claim for novelty and efficiency lies in the mode of construction, whereby it is enabled to resist high pressures of steam in an effective manner. The booklet issued by the Quaker City Rubber Co. gives a good deal of information of interest to engineers, being the most complete brochure on the subject which I have come across. Reports from a works in the north of England using superheated steam state that it stands a temperature of 700° F. successfully. For a fibrous packing it is claimed that it is the only one which has the particular action which causes a variation in the pressure, and consequently in friction on the piston rod strictly in proportion to the pressure of steam existing at any moment in the cylinder.

WASTE RUBBER VALUATION.

IT has often formed matter for comment that such a valuable commodity as raw rubber should be bought by inspection only of samples without the ancillary assistance of chemical analysis. Yet there are solid reasons against any change in present procedure. In the case of rubber scrap the amount of money involved is not so great, but still it is recognized by purchasers that it is very difficult to accurately gage the value of any particular lot, especially of mechanical rubbers. The main safeguard which it is now customary to employ is in the form of a negation. The purchaser stipulates that the rubber shall not contain certain defined goods or qualities. Thus in drab waste, it is stated that no rubber toys are to be included, and this not so much from the common quality of the rubber as from the point with which it is adorned. It is obvious that chemical analysis to be of any real benefit would have to be on a scale and consequently involve an expense which puts its adoption as a precautionary outside consideration. Probably the best course to pursue in the interests of both seller and buyer is to adopt sorting and classification to an increased extent, and already much more is being done in this direction than was the case a few years ago.*

WAR OFFICE TAPE.

OF late the specification of this article has undergone some change. It was formerly compulsory to destroy the adhesiveness of the rubber tape by a slight cold cure, a job that was always an unpleasant and ticklish one, in order to prevent the sulphur rising above the low limit specified. Now this partial cure is not demanded. Another alteration is the substitution of cotton tape in the rolls instead of paper. This is a white tape and has nothing in common with the red variety with the possession of which the War office is so commonly credited. This class of business does not cause much enthusiasm among the manufacturers. The profits of this, as also in other government contracts, are not considered at all commensurate with the trouble of keeping strictly to specification, and this sending in of tenders is more often than not influenced by considerations other than expectation of profit.

*Such classification is now the rule in the American trade, under conditions which become generally recognized, and with satisfactory results.—THE EDITOR.

RUBBER ABSURDITIES.

OUR London contemporary in a recent issue reprints with suitable comments a letter from a new technical journal on the subject of adulteration in rubber goods. In a spirit of kindness that journal refrains from giving any details as to the name of the paper or the writer's identity. Had the letter come under my notice in the first instance, I don't think I should have shown any scruples in pilloring the author of such a farrago of nonsense. By careless readers hypothesis is often mistaken for fact, and the dubiousness of argument from analogy is frequently overlooked. It is often said that practical men can afford to smile at what they read in print concerning their industries, but I don't altogether agree with this. It is astonishing in these days of scissors and paste how a paragraph with anything novel or superficially attractive about it goes the rounds and grotesque perversions of the truth may easily do harm to a reputable industry. From these considerations I take it that it is not only within the province of trade journals to pillory offenders against the tenets of accuracy but it becomes essential on behalf of those whose interests they subserve.

DUNLOP REORGANIZATION.

A MEETING of the joint committee of the dissenting ordinary and deferred shareholders was held on December 6 in Dublin. Mr. Du Cros made various propositions with regard to the reduction of capital, the original scheme, it will be remembered, not having met with the approval of the necessary number of shareholders. In the end it was decided to submit the new proposals for counsel's opinion before doing anything further.

RUBBER IN PERU.

A FRIEND of mine who lately returned from a prolonged tour in South America has interested himself in the rubber forests. He finds, however, with regard to the concessions which he has obtained that English capitalists look askance at his proposals to engage their interest and assistance. My friend confirms the statement that a large proportion of the output of Peruvian rubber figures in the statistics for Manáos. At present it is about fourteen days mule carriage to ship the rubber from the principal producing centers to the Pacific ports and the lack of labor which has so long militated against the exploitation of the country's resources is still being acutely felt. Of course the value of forest concessions in regions where there is no bar to general gathering can easily be overestimated and there is always the chance of private rubber being annexed by gatherers who are not troubled with scruples. I imagine that the necessity of maintaining an efficient police force must continue to discourage the prospective *concessionnaire*.

MR. COOPS.

MR. CHARLES COOPS, who was originally in the employ of Messrs. Charles Macintosh & Co., being subsequently manager of the Eccles Rubber Co., is now acting as London representative of Messrs. Adler, of Coventry, Amsterdam, and Cologne. This firm has the sole agency for the sale of Messrs. Macintosh's tires on the continent and are also at liberty to sell in Great Britain, though in this case they have no monopoly.

MALAY STATES.—The big Chinese firm, Chow Kit & Co., at Kuala Lumpur, advertise motor car tires from "The Goodyear & Rubber Co.," but this name is not acknowledged by any firm in the trade known to this Journal.

RUBBER PLANTING INTERESTS.

THE BRITISH BORNEO PARA RUBBER CO.

THIS company was formed last April in Glasgow, Scotland, with £30,000 [=$145 995] capital, to acquire from J. Melmore Halliday a concession of land granted by the British North Borneo Co. Mr. Halliday has had 17 years' experience as a planter in the Far East and has become manager of the new company. The concession covers 2000 acres, near Beaufort, in Province Dent, of which 200 had been cleared by September 18, on which date occurred the first planting, from nurseries formed by Mr. Halliday. The two first seedlings were put in place by the Governor and Mrs. Gueritz, each of whom had been provided with a tastefully decorated spade. Luncheon was served to his Excellency's party in the manager's house, and the hope expressed that the governor would be present at the first tapping, six years later.——THE INDIA RUBBER WORLD of November, (page 48) reported the presence of the Governor and Mrs. Gueritz at the initial tapping of rubber on the Sekong estate, British North Borneo.

RUBBER PLANTING PROSPECTS IN JAMAICA.

MR. ROBERT ELWORTHY of Linstead, Jamaica, writes to THE INDIA RUBBER WORLD that there is much land on that island suitable for rubber culture, but as in Nicaragua planters have hitherto given attention almost exclusively to bananas. They are at last beginning, however, to realize the importance of rubber, and it is probable that the demand this year for seeds and plants will be far greater than can be met by the local department of agriculture. There are a few pioneers in this new culture in Jamaica, and their success so far—some of them have trees nearly old enough to tap—has been the means of encouraging others to plant. The species grown is *Castilloa elastica*, and Mr. Elworthy considers his 5 year old trees to be equal to any of the same age in Mexico.——The Jamaica public gardens for some time past have been selling rubber seeds and plants to local planters.

YIELD OF PLANTATION RUBBER.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In the month of June I had about 400 cultivated rubber trees (*Castilloa elastica*) tapped, which yielded about 2 quintals [=202.8 pounds] of clean rubber, averaging therefore ½ pound from each tree. I could have had one pound from each tree extracted, but did not want to do so lest the trees might be injured. These trees are from 6 to 7 years old and were originally planted as shade among cacao trees. The rubber thus obtained I sold here in San Jose and was paid the price of 135 colones per quintal, equal to about $62.80 United States gold, or 62 cents per pound. Faithfully yours, H. HOPPENSTADT.

San Jose de Costa Rica, October 6, 1905.

"CEARA" RUBBER IN CEYLON.

ALTHOUGH the *Hevea* and *Ficus* species receive by far the greater amount of attention among planters of rubber in Ceylon, the Ceará tree (*Manihot Glaziovii*) has not been overlooked. At the last shareholders' meeting of The Ceylon Land and Produce Co., Limited, the chairman mentioned the recent planting of *Hevea* and *Castilloa*, also stating: "Those of the Ceará trees planted years ago that now remain are flourishing. You will have noted that we handled a few hundred pounds last year at a very handsome price, and we will doubtless collect an increased quality during this season at a lower cost." At the meeting of The Consolidated Estates Co., Limited, it was stated that 131,000 rubber trees had been planted among their tea, several thousand of which were nearly ready for tapping. Most of the land had been planted with Pará, but they were now trying *Castilloa* and Ceará varieties on Warriagalla estate as an experiment. At a recent London auction *Manihot* rubber from Ceylon sold at 5*s.* 10*d.* [=$1.42] per pound.

CEYLON "PARA" RUBBER IN DRY WEATHER.

A CORRESPONDENT of THE INDIA RUBBER WORLD, writing from Ceylon under date of October 12, said:

"The sou'west monsoon was a total failure in Ceylon this year, seriously affecting the rubber estates. The *Hevea* likes a drought, no doubt of that, and the following rains bring up the latex wonderfully; but the flow and the yield in dry rubber is less in time of drought. But it was young clearings that suffered; seed at stake plants failed, necessitating replanting and many young stumps or tender basket plants died. Now the rains are on again and planting is going forward briskly. The seed crop this year has been a phenomenal one, and small fortunes already made out of it—that was due to drought, the seed setting well."

RUBBER FROM "CAMP PEARSON."

A RECENT number of THE INDIA RUBBER WORLD [April 1, 1905—page 233] contained an article showing photographs of buildings at Camp Pearson, on the property of the Boston-Panama Co., in Panama. Recently rubber from that camp has begun to arrive in the United States, which has sold as high as $1.25 a pound. As this is from wild *Castilloa* trees, and as the product formerly brought only 80 cents a pound, the difference between the native method of preparing the rubber and the cleanly methods of preparation and coagulation that are now in use is most apparent. The chemical analysis of a sample from a recent lot is as follows:

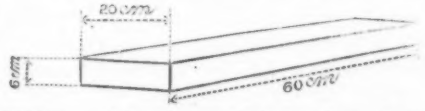
Resinous matter	6.0
Ash	.2
Moisture	2.8
Rubber	91.0
Total	99.0

* * *

DIRECTOR Emil Spannagel, of the Vereinigte Berlin-Frankfurter Gummiwaaren-Fabriken (Berlin), having followed the course of rubber planting with much interest for a number of years, has taken an interest in a large company which is engaged in planting the *Kickxia elastica*, together with cacao, in Kamerun, the company being the Kautschuk-Pflanzung "Meanja" Aktiengesellschaft, with offices in Berlin and Victoria. [See THE INDIA RUBBER WORLD, February 1, 1904—page 166.]

DR. ESCH ON "CASTILLOA" RUBBERS.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I beg to inform you that, in the translation of my paper on "Caucho and Castilloa Ulei Warburg" [See our issue of November 1—page 43], the term *brote* must not be rendered "loaves," because the said "brote" like shape is similar to the ordinary Matto Grosso Pará; that is to say, they have the form indicated in the sketch herewith. Further, I beg to state that Mr. W. Villinger, of Antwerp, who has a fleet of steamers in Bolivian and other rubber districts, gave me particulars which indicate that the conclusions in the said paper are for the most part correct. I shall endeavor to complete my article by the statements of other explorers. Faithfully yours, DR. WERNER ESCH.



Hamburg, November 19, 1905.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of India-rubber and Gutta-percha, for the month of October, 1905, and for the first ten months of five calendar years:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
October, 1905	$102,167	$114,600	$ 243,905	$ 460,672
January–September.	856,493	944,494	2,127,300	3,928,287
Total	$958,660	$1,059,094	$2,371,205	$4,388,959
Total, 1904 . .	724,916	988,025	1,976,519	3,689,460
Total, 1903.....	710,825	790,903	2,090,863	3,592,591
Total, 1902	596,272	865,711	1,659,205	3,121,188
Total, 1901.....	502,264	733,329	1,470,176	2,705,769

MEXICAN IMPORTS OF RUBBER GOODS.

THE latest report of the British consul for the district of Vera Cruz, Mexico, gives the following figures as representing the value of manufactures of Caoutchouc into Mexico for four years, the bracketed figures, showing the equivalents in United States currency, being supplied by THE INDIA RUBBER WORLD:

Fiscal year 1900-01.....	£25,640	[$124,866.80]
Fiscal year 1901-02.....	22,375	[108,956.51]
Fiscal year 1902-03.....	27,532	[134,080.84]
Fiscal year 1903-04.....	32,224	[156 930.88]

In this connection may be mentioned the official statement of values of exports of India-rubber goods from the United States to Mexico for five fiscal years:

YEARS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
1899-1900.....	$ 82,433	$1,043	$ 47,358	$ 130,831
1900-01.....	113,624	2,526	91,786	207,936
1901-02	124,733	1,455	92,222	218,410
1902-03	146,035	2,609	160,325	308,969
1903-04.....	137,608	1,553	146,712	285,873
Total.....	$604,433	$9,186	$538,403	$1,152,022

German official statistics do not indicate the value of exports of rubber goods to Mexico, and mention the quantities (by weight) of only the principal classes. From a statement for the first nine months of three years the following figures have been compiled, showing weights in pounds avoirdupois of exports to Mexico:

	1903.	1904.	1905.
Hard rubber goods	18,260	26,180	17,160
Principal classes soft rubber.....	44,440	41,580	79,640

Austria also exports rubber goods to Mexico, though to what extent cannot be determined from official sources. During January-September, 1905, however, Austrian exports to Mexico are stated to have included 88,880 pounds (in weight) of elastic shoe insertions.

RUBBER ON THE STEAMER "AMERIKA."

THE great new steamship, the *Amerika*, of the Hamburg-American line, as might be expected, is exceedingly well equipped with rubber goods. The largest single use of rubber is in the shape of matting and tiling, the five decks, "Kaiser," "Roosevelt," "Cleveland," "Washington," and "Franklin" all receiving their quota, although not so much was given to the author of "Poor Richard" as to some of the others. The treads are of various textures and colors, the best being the deeply corrugated treads used on the stairs leading from the "Kaiser" deck, and the square pyramidal treads on the stairs that lead from the main to the upper smoking room. The worst exhibition of the rubber art was the tiled floor of the smoking room, which was done in three colors, light red, dirty white, and chocolate. The colors were very uneven, and the alleged white was not nearly cured and was scarred very badly. The extensive corridors on the various decks were covered with rubber in black and white squares, which was very pretty, but a trifle too smooth. The main staircases were covered with white rubber, which was perfectly smooth, and as it was constantly being washed, made walking perilous, particularly if the boat rolled or pitched. In addition to these were a great variety of lesser rubber appliances, such as big rubber cushioned door stops; square white mats in each cabin to protect the carpet from slopping, supposing anybody cared to bathe; and very pretty red mats on the smoking room tables on which to set apollinaris bottles and the like. This covers, of course, rubber that is in sight, and takes no account of the valves, packings, hose, and engineering supplies of that sort.

BOTTLE OR MUG MAT.

RUBBER COIN MAT NOVELTIES.

THE average American is pretty sure that he knows all about cash mats, but a very casual analysis of his knowledge would easily prove that it was confined almost wholly, as far as markets go, to the United States. The German manufacturers, however, are making mats in many styles, not only for Germany, but for the whole world; that is, where they are applicable. The Vereinigte Berlin-Frankfurter Gummiwaren-Fabriken, for example, make half a dozen different types—square, round, and octagonal—with surfaces that are either finished in rubber spikes, pyramids, or rings, and that are often furnished with very pretty nickel borders, and sometimes with tin borders on which are printed gorgeous and even attractive advertisements.

A curious bit of information concerning the market for cash mats was developed soon after the company began to seek the world's trade. It was found that in Italy and Spain, and in some Latin American countries, where there is often a question as to the integrity of the silver or gold coins that the customer pays, the cash mat is not welcomed, both buyer and seller preferring to have a resonant counter on which they can ring the coin to prove its genuineness.

BALLOONS IN THE WEATHER SERVICE.

IT is well known that the weather bureaus the world over—French, German, Russian, English, and American—have certain experiment stations which work in conjunction and try experiments at the same time. One very interesting experiment is the sending up of rubber balloons about 5 feet in diameter, to which are attached thermometers and other instruments which are self registering, the balloons being allowed to go as high as they will until they finally burst. It is an interesting fact that all of these balloons are made in Germany, by the Continental-Caoutchouc- und Guttapercha Compagnie (Hannover) While the writer was at the factory of this company recently a shipment of 50 of these balloons went to a German steamship that was starting off for a voyage around the world to get hydrographic data.

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED OCTOBER 31, 1905.

NO. 802,982. Hoze nozzle. H. Gibbs, assignor to W. D. Allen Manufacturing Co., both of Chicago.

803,011. Tire for vehicle wheels. [Solid; combined with undercut channelled rim, and special retaining wires] C. Motz, Akron, Ohio.

803,053. Tire. [Pneumatic; with reinforced casing and special supporting felly.] H. G. Fiske, assignor, by mesne assignments, to Morton Trust Co., both of New York city.

803,095. Fire hose apparatus. [For interior fire protection equipment.] E. Cliff, East Orange, N. J., assignor to Cliff & Guibert Co., New York city.

803,127. Hose coupling. C. T. Palmer, Chicago.

803,128. Hose coupling. *Same.*

803,170. Atomizer or nebulizer. O. C. Knight, assignor to The National Vaporizer Co, both of Kalamazoo, Mich.

803,211. Horseshoe cushion. P. Clifford, assignor of one half to D. J. Corbett, both of Buffalo, N. Y.

803,219. Hoof pad. W. B. Fairweather and G. Duffield, Chicago.

803,326. Vehicle wheel [with tire composed of short segmental links having elastic cushions between them.] J. M. Carpenter, Millersburg, Ohio.

803,344. Horse collar [with inflatable pads]. J. S. Hull, Manly, near Sydney, New South Wales.

803,345. Pneumatic tired wheel. T. B. Jeffery, Kenosha, Wis.

803,367. Cushion tire. C. G. Shaw and W. J. Shaw, Los Angeles, Calif.

803,500. Vehicle wheel [with cushion tire]. W. J. Mitchell and J. R. Mitchell, Lynn, Mass.

803,501. Vehicle wheel [with cushion tire]. *Same.*

803,510. Pneumatic tire. W. A. Sanky, Sutton, assignor to F. Reddaway, Pendleton, Manchester, England.

Trade Marks.

176. India-rubber tires, solid and pneumatic, and India-rubber cover bandages, repair sheets, plasters, and patches for such tires. Continental Caoutchouc Co., New York city. *Essential feature.*—The word CONTINENTAL.

4,488. Rubber composition and joint packing. The Garlock Packing Co., Palmyra, N. Y. *Essential feature.*—The representation of a pair of calipers crossed by a measuring scale, between which appears a diamond shaped figure containing the word GARLOCK.

ISSUED NOVEMBER 7, 1905.

803,658. Cycle tire. A. S. Allen, Brookline, Mass.

803,659. Pneumatic tire [with tread protected by coils of wire]. *Same.*

803,927. Fountain pen. E. Reisert, Hennef, Germany.

803,989. Armored tire. C. W. Caterson, Franklin Forks, Pa,

804,086. Womb supporter [comprising a tube of flexible material coiled upon itself to provide two substantially frusto-conical members united at their ends of smallest diameter; and a device for permitting inflation of said tube]. M. J. Barchfeld and F. C. Hunt, Girard, Ohio.

894,088. Pneumatic tire. M. H. Blakeslee, assignor of one-half to R. D. Baker, both of Buffalo, N. Y.

Reissue.

12,402. Vehicle tire. H. Lutz, assignor of two fifths to B. Harris, both of Hamilton, Canada.

Trade Marks.

324. Rubber overshoes. The Adams & Ford Co., Cleveland, Ohio. *Essential feature.*—The word EVERSTICK in which there is an extended flourish under the body of the word from the initial to the final letter.

9 006. India-rubber auto-bags and auto-pouches. Continental Caoutchouc Co., New York city. *Essential feature.*—The word CONTINENTAL.

ISSUED NOVEMBER 14, 1905.

804,218. Gymnastic apparatus. R. Fiedler, Berlin, Germany.

804,226. Horseshoe [with elastic bottom plate]. H. Henne, Düsseldorf, Germany.

804,272. Respirator [with valve-controlled air inlet and outlet]. W. Schwartz, Pforzheim, Germany.

804,368. Resilient tire. [Pneumatic.] W. F. Beasley, Plymouth, N. C.

804,369. Resilient tire. [With core of longitudinal truss walls.] *Same.*

804,406. Finger shield [and supporting strap]. Daisy Hungad, Rochester, N. Y.

804,407. Syringe. [Fountain syringe with supporting frame for the bag.] A. B. Jamison, New York city.

804,574. Jar closure [embracing a resilient washer]. T. Beatty, Washington, Pa.

804,584. Syringe. [Vaginal.] C. J. Davol, Providence, R. I., assignor to Davol Rubber Co.

804,605. Vehicle wheel [with cushion tire]. G. G. Jackson, Allegheny, Pa.

804,613. Vehicle tire. [Pneumatic.] Frank A. Magowan, Trenton, N. J.

804,680. Scalp massage brush. R. M. Smith, Chicago.

804,701. Pneumatic tire. O. M. Bigger, Holt, Cal.

804,750. Operating pad or receptacle [comprising a bottom and an inflatable cushion wall]. C. W. Meinecke, Jersey City, and D. Hogan, Hoboken, N. J., assignors to Whitall Tatum Co., New York city.

804,772. Vehicle tire. [With core formed wholly or in part of rubber coated yarns.] F. G. Saylor, Franklin, Mass., assignor to M. and S. Tire Co., Boston.

Trade Mark.

10,725. Fabric hose. Eureka Fire Hose Co., Jersey City, N. J. *Essential feature.*—The words EUREKA PEERLESS.

ISSUED NOVEMBER 21, 1905.

804,847. Fountain pen. J. Holland, Cincinnati.

804,850. Article of manufacture comprising leather and rubber bodies. C. L. Ireson, Boston.

804,851. Method of attaching rubber to leather. *Same.*

804,852. Resilient tire. [Pneumatic; with leather wearing tread.] *Same.*

804,853. Method of attachment of rubber and leather. *Same.*

804,854. Art of vulcanizing leather and rubber. [Adapted to the tire manufacture.] *Same.*

804, 855. Leather wearing tread for resilient tires. *Same.*

804,891. Vehicle tire [composed of concentric alternate layers of rubber and fiber]. A. J. Slade, New York city.

804,892. Protective tread for pneumatic tire. J. M. Small, Piqua, Ohio.

804,896. Vehicle tire and rim. W. C. State, Akron, Ohio, assignor to the Goodyear Tire and Rubber Co.

804,992. Hose coupling. A. Anderson, Chicago.

805,023. Garden hose support. J. McBoyle, Oakland, Cal.

805,088. Cushion heel. W. T. McLaughlin, Boston.

805,132. Baseball bat [with corrugated rubber grip]. W. F. Gubbins, Chicago.

805,339. Syringe. [Vaginal; spray tube provided with a series of distending fingers.] J. J. Brin, Chicago.

805,371. Ice helmet. C. W. Meinecke, Jersey City, and D. Hogan, Hoboken, N. J., assignors to Whitall Tatum Co., New York.

805,410. Horseshoe [with elastic cushion]. J. H Carey, Hartford, Conn., Mary A. Carey, administratrix of said J. H. Carey, deceased.

Designs.

37,684. Mat. A. J. O'Brien, assignor to New Jersey Car Spring and Rubber Co. *Claim.*—The ornamental design for a mat as shown.

37,686. Nebulizer. A. C. Eggers, New York, assignor to Goodyear's India-rubber Glove Mfg. Co. *Claim.*—The ornamental design for a nebulizer as shown.

ISSUED NOVEMBER 28, 1905.

805,434. Vehicle tire. [Cushion.] L. E. Allen and W. J. Poyser, Canton, Ohio.

805,474. Means for inflating rubber tires. A. G. Lavertine and J. E. McNellan, Johannesburg, Transvaal.

805,503. Vulcanizing hard rubber articles having interior cavities. H. O. Traun, Hamburg, Germany.

805,511. Device for supporting fire hose, life preservers, etc. T. F. Adams, New York city.

805,528. Vehicle wheel [with rope tread tire]. E. Cantono, Rome, Italy.

805,591. Non puncturable tire. L. A. Davidson and J. M. Logan Hartford, Conn.

805,606. Bridle bit [covered with rubber]. H. T. Werk, Cleveland, Ohio.

805,744. Hose coupling. J. F. McElroy, Albany, N. Y., assignor to Consolidated Car Heating Co.

805,750. Hat and cap [having a pneumatic expansible pad with means for inflation]. M. Redgrave, Jersey City, N. J.

805,826. Vaginal irrigator. M. Vidaver, New York city.

805,851. Medicinal injector [comprising a tube and compressible bulb]. N. J. Goldfarb, Düsseldorf, Germany.

806,013. Means for securing pneumatic tires to rims of wheels. S. Smith, Providence, R. I.

Trade Marks.

6,073. Rubber heels and soles. Massachusetts Chemical Co., Boston. *Essential feature.*—The words CAT'S PAW.

9,280. Rubber for dental purposes. Traun Rubber Co., New York city. *Essential feature.*—The representation of a man in the act of throwing stones, the lower limbs of said man terminating in snakes.

13,562. Golf balls. A. G. Spalding & Bros., New York city. *Essential feature.*—The representation or a spot or dot of color contrasting with the surface color of the goods on which it is placed.

13,715. Insulating tape. The Standard Paint Co., New York city. *Essential feature.*—The representation of a peacock with his tail spread out within a circle, in which also appear the letters S P C. This is surrounded by a black ring on which appears at the top the word PEACOCK.

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of those listed below was in 1904.

* *Denotes Patents for American Inventions.*

[ABSTRACTED IN THE OFFICIAL JOURNAL, OCTOBER 25, 1905.]

14,884 (1904). Vehicle wheel [with rubber or pneumatic springs instead of metal]. J. S. Phillips, Swords, Dublin.

* 14,920 (1904). Pad for gilding [of porous rubber]. W. H. Cobb, Providence, Rhode Island.

* 14,957 (1904). Pneumatic tire. [To facilitate attachment and removal of covers a flat rim having a flange at each edge is secured to the felloe by bolts.] G. H. Sherman and A. T. Sherman, Detroit, Michigan.

14,965 (1904). Pneumatic tire. [Puncture and slip preventing cover formed of a band of leather, furnished with rivets on the tread and notched to form tongues to which are fitted metallic hooks engaging fixing wires.] A. Beaujon, Paris.

15,031 (1904). Elastic tire [with an inner rim and an outer rim of considerably greater diameter]. R. Basch and S. Basch, London.

15,039 (1904). Brush [made of fiber, India-rubber, etc., and fixed to holders so that they can be inserted through bungholes and used to clean the interior of casks]. H. C. Russell, London.

* 15,064 (1904). Syringe [having a series of expansible fingers so constructed as to be easily taken apart]. E. E. Hall, Chicago, Illinois.

15,097 (1904). Means for repairing tire punctures. H. Harrison, Birmingham.

15,140 (1904). Reservoir pen. [Two ink ducts are provided in the plug holding the nib; one supplies ink to the top of the nib, the other to the underside.] E. de La Rue, London.

15,168 (1904). Reservoir pen. J. S. Crowley, London.

[ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 1, 1905.]

15,280 ((1904). Pneumatic tire. [Cover formed of casings of flexible metallic fabric capable alone of resisting pressure in air tubes.] C. Joly and R. Boucher, London.

15,299 (1904). Valve for inflating tires. E. E. Michelin, Clermont-Ferrand, France.

15,436 (1904). Regenerating India-rubber. [Powdered vulcanized rubber is mixed with sulphur-absorbing compounds of the alkalies, compressed into cakes, and heated.] A. Kittel, Vienna, Austria.

*15,451 (1904). Pneumatic massage apparatus applicable to the ear. F. H. Crabtree, Anaconda, Montana.

15,613 (1904). Pneumatic tire. [Anti-skidding device—strip of metal gauze secured by wire stitching to outer chain-mail covering.] E. N. Lawley, London.

15,644 (1904). Heel protector. J. Hanlon, Liverpool.

15,660 (1904). Heel protector. G. Morton, Manchester.

[ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 8, 1905.]

15,715 (1904). Hoof pad [with frog attached to pad by studs formed and fitted into holes in the pad]. H. T. Pearce, Stroud.

15,842 (1904). Brush [fitted with self-feeding means for supplying liquid]. A. L. Tyerman, Liverpool.

15,863 (1904). Elastic tire [consisting of rubber blocks fitted in separate metal shoes secured to the rim by a series of bolts]. M. H. Smith, London.

15,970 (1904). Heel protector. J. L. Penny, Wolverhampton, and J. E. McFarlane, East Riding, Yorkshire.

* 15,984 (1904). Pneumatic tire. [With flexible reversible tread to prevent slipping and adapted for driving wheels. H. de L. Weed, Canastota, and J. S. Pickell, Syracuse, New York.

15,999 (1904). Waterproof sole for slippers. H. Hargreaves, Bolton, Lancashire.

[ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 15, 1905.]

16,134 (1904). Horseshoe with rubber projections. T. Wood, Charlton-on-Medlock, Manchester.

16,143 (1904). Boot sole and heel. J. Newton, Longton, Staffordshire.

16,378 (1904). Golf ball [with core wound from rubber tubing, sealed at the end and containing compressed air]. T. Harvey, Waterville, Ireland.

16,385 (1904). Pneumatic tire [having a removable rim which carries the outer cover]. F. Courthope, Middlesex.

* 16,458 (1904). Elastic tire [with side extensions around which are placed rings to hold the tire in the rim]. B. F. Kenna, Philadelphia.

16,518 (1904). Reservoir pen. L. C. Sloan, London.

[ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 22, 1905.]

16,629 (1904). Heel protector. H. B. Morrison, Singleton, New South Wales.

16,632 (1904). Waterproofing composition for boots. [Gutta-percha and tar.] L. Levy, Cologne, Germany.

16,660 (1904). Pneumatic tire [with method to stop punctures]. E. Richard and J. Joussame, Bordeaux, France.

16,681 (1904). Pneumatic tire [with leather band to prevent side slip]. W. S. Cort and W. H. Stevens, Market Harborough.

16,697 (1904). Pneumatic tire [with metal studs to prevent side slipping]. C. H. Wilkinson, Huddersfield.

16,802 (1904). Feeding appliance for animals. [A tank with rubber teats arranged therein.] J. D. Macmillan and C. Campbell, County Queens, Ireland.

16,849 (1904). Pneumatic tire [with flexible metallic bands to prevent side slip]. H. Ellison, Cleckheaton, Yorkshire.

16,866 (1904). Heel protector. W. Sagar, J. Sagar, I. Ingham, Padiham, Lancashire, and E. D. Little, Blackburn.

16,870 (1904). Elastic tire. [Annular rings of rubber secured by bolts to the rim.] J. Richardson, South Park, Lincoln.

16,924 (1904). Golf ball. [The core is wound from heated strips of rubber coated with a suitable solvent, after which the core is covered with Gutta-percha.] C. T. Kingzett, Chislehurst.

17,006 (1904). Means for inflating pneumatic tires. P. Rupp, Würtemburg, Germany.

17,015 (1904). Rubber tiling. [Made antiseptic by the inclusion of 1 to 10 per cent. or other proportions of carbolic acid, chloride of lime, or the like. The tiles can be used on shipboard or in lavatories.] C. H. Gray, India Rubber, Gutta-Percha, and Telegraph Works, Silvertown.

[ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 29, 1905.]

17,135 (1904). Heel protector. G. L. Scott, Rochdale.

17,208 (1904). Golf ball. [Made by impregnating woolen yarn with rubber solution and winding it upon a core.] P. Cruickshank, Edinburgh.

17,216 (1904). Valve for inflating tires. E. Kudell, Cöln, Germany.

17,233 (1904). Tire inflator. Dover, Ltd., and H. W. Dover, St. James, Northampton.

17,285 (1904). Electric insulator [with inner cap and shield of hard rubber]. F. G. Kleinsteuber, Pankow, near Berlin.

17,289 (1904). Apparatus for repairing tires, boots, etc. A. S. Bowley, Putney, Surrey, and T. W. Hanmer, Uckfield, Sussex.

* 17,313 (1904). Devulcanizing India-rubber. [By the use of an alkaline solution.] R. B. Price, Chicago, Illinois.

17,342 (1904). Sole and heel protector. H. W. Bernthal, Chatham.

17,495 (1904). Non slipping puncture proof jacket of steel for pneumatic tires. C. F. and C. Watson, Holloway road.

17,518 (1904). Vehicle wheel [having two tires side by side. to prevent slipping]. A. W. Prentice, Cambuslang, Lanarkshire, and A. Shiels, London.

17,555 (1904). Golf ball. [Ground cork impregnated with a solution of rubber is put into naphtha, dried, heated, and molded to form the core; outer cover formed of rubber.] J. Macneil, Glasgow.

PATENTS APPLIED FOR—1905.

Space is given here only to Applications for Patents on Inventions from the United States.

21,540. Thomas Midgely, London. Improvement in tires. Oct. 23.
22,815. Charles A. Davol, London. Improvement in syringes. Nov. 7.
23,894. C. J. Barrell, London. Protective cover for tires. Nov. 20.
23,886. S. H. Hodges, Leicester. Fountain pen. Nov. 20.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATES OF APPLICATION).

354,541 (May 23, 1905). G. S. Squires. Carriage tire.
354,574 (May 24). A. D. Zurenger. The use of webbing in the Caoutchouc manufacture to make the product untearable, and to preserve its elasticity.
354,642 (May 25). G. Kaulhausen. Protecting device for pneumatic tires.
354,653 (May 25). E. Lapisse. Protector for pneumatic tires.
351,654 (May 25). E. Lapisse. Clasping device for pneumatic tire protectors.
354,671 (May 26). Bowly and Runyon. Tire in sections.
354,677 (May 26). Sadler. Tire for motor cars.
354,659 (May 26). J. Gibernon. Pneumatic horse collar.
354,455 (April 5). G. Desclée. Fitting device for pneumatic or other rubber tires.
354,684 (May 26). Dessaint and Toquillon. Decorticating machine for *lianes* and rubber roots.
354,723 (May 27). Société Michelin et Cie. Process for making leather protective covers for pneumatic tires.
354,727 (May 27). F. Franck. Braces (suspenders) with elastic attachment.
350,113 (April 11). B. Roux. Process for the manufacture of tubing and hose from reclaimed rubber.
354,914 (April 11). Penavayre and Lunis. Buff leather movable protector for tires.
354,975 (June 6). McKim. Pneumatic tire.
354,883 (June 3). J. M. Jacquemin. New application of India-rubber to certain parts of footwear.
354,988 (June 6). C. Pierson. Tubes for inflating tires.
355,016 (June 7). P. Germain. Rubber treated artificial silk.
355,017 (June 7.) P. Germain. Vulcanizing and reclaiming process for Caoutchouc.
355,057 (April 19). Mme. Eruchet. Protector for pneumatic tires.
355,092 (June 8). C. Motz. Elastic tire.
355,108 (June 9). J. Leprètre. Removable air tube for pneumatic tires.
355,257 (June 15). G. H. C. Allié. Pneumatic tire.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieur-Counseil, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

WHY DO BUSINESS WITHOUT A PROFIT?

TO THE EDITOR OF THE INDIA RUBBER WORLD: The manufacturers whose principal raw materials consist of rubber and cotton are confronted with the prospect of continued high prices for raw material. Will they have sufficient courage to advance their selling prices high enough to enable them to make a fair manufacturer's profit, or will they wait until the weak ones fail and the weary ones become tired?

In the leather boot and shoe business the tanners of leather have been told by the shoe manufacturers year after year that they should not advance the price of leather, because it would injure the shoe manufacturer, for the price of shoes could not be advanced.

Experience has shown that, after some of the weak ones had failed, and others had become weary and retired from business, the demand for shoes equalled the supply, and then the shoe manufacturers found out, to their surprise, that they could advance the price of shoes, and they did.

Why should you do what you don't want to, when you don't want to? J.

Boston, December 8, 1905.

AIR BRAKE HOSE ON FREIGHT TRAINS.

AT the hearing of railroad men before the Interstate Commerce Commission, in regard to air brake hose, mentioned in THE INDIA RUBBER WORLD last month (page 91), F. H. Clark, general superintendent of motive power of the Chicago, Burlington, and Quincy Railroad Co., testified:

In order to illustrate the effort being made by railroads to equip their cars, I would state that a rule was passed on June 1, 1905, by the Master Car Builders' Association, providing that after September 1, 1907, a railroad receiving a non equipped car shall hold the delivering company responsible, shall repair it themselves and send the bill to the delivering company, not to the owning company. The effect of this rule is that all cars must be equipped with air brakes by that date.

F. R. Clark, head of the Railway Conductors' Order, testified before the commission:

From my knowledge of the employés' feelings I can say that they believe that perfection can only be reached when the railroads are required to have all their cars equipped and in use [with air brakes]. The employés are willing to overlook unavoidable failure to keep up the exact percentage of 100, but they demand its general enforcement.

Figures show that the railroads have used an average of nearly 90 per cent. of air braked cars during the last six months; the Pennsylvania has used 76 per cent. Previously in answering arguments of railways, I stated that the railways would make such savings in operating expenses on account of installing air brakes that they would be able to pay for the installation. This is the case; the Pennsylvania, for example, has reduced its force of brakemen in the proportion of 3 to 2 on 100 per cent. trains. Of course this reduction increases danger for three men can much better attend to signals and flagging than two, but the railroads have been able to recoup their expense by this policy of retrenchment. The principal reason that the railroads resist a 100 per cent. requirement is that they have old cars not fit to equip with air brakes and they wish to get full use out of them.

The employés are unanimous in their opinion that the use of the power brake is necessary to safety. I am willing therefore to accept in their name an order by the commission that on and after July 1, 1907, 100 per cent. of all cars used by railroads shall be equipped and operated with air brakes. No car can be unused but all must be connected and in use. What is wanted is a final settlement and not a series of hearings over each proposed increase in the minimum.

As was mentioned last month, a new order of the Interstate Commerce Commission requires that no freight train, after August 1, 1906, shall be operated with less than 75 per cent. of the cars equipped with air brakes in actual use. The intention of the commission is to bring about the complete equipment of all freight cars with air brakes as speedily as the railway companies become able to comply fully with the law.

AT the annual meeting of Klang Coffee Cultivation Co., Limited (Penang, August 29), the report was less favorable regarding coffee than had been anticipated, due to an abnormal drought. The first sale had been made of the rubber from the estate; there were about 41,500 rubber trees, of which about 800 were 7 years old. The manager was congratulated upon winning for the estate the Governor's Cup at the Agri Horticultural show at Penang this year, as well as at Kuala Lumpur last year.

OFFICIAL STATISTICS OF INDIA-RUBBER AND GUTTA-PERCHA.

For the United States Fiscal Year Ended June 30, 1905.

INDIA-RUBBER.

I.—Imports of Crude India-Rubber, by Countries.

FROM—	Pounds.	Value.
Europe:		
Belgium	5,198,365	$1,602,597
France	701,876	600,853
Germany	3,714,567	2,358,370
Netherlands	472,902	349,089
Portugal	4,458,091	3,194,541
United Kingdom	10,004,684	7,200,647
Total	24,570,485	$18,306,097
North America:		
British Honduras	26,983	$ 16,662
Quebec, Ontario	9,379	7,914
Costa Rica	152,022	83,301
Guatemala	86,068	36,879
Honduras	82,342	42,829
Nicaragua	769,381	488,767
Panama	261,461	154,033
Salvador	52,031	21,259
Mexico	352,696	185,951
West Indies—British	4,053	2,531
Cuba	275	140
Total	1,796,652	$1,036,276
South America:		
Brazil	36,593,555	$28,478,252
Colombia	622,477	353,630
Ecuador	863,484	538,172
Guiana—British	3,400	886
Dutch	8,895	3,576
Peru	174,781	119,297
Venezuela	444,056	228,455
Total	38,710,648	$29,720,269
Asia:		
East Indies—British India	202,451	$148,176
Sts. Settlem'ts	1,899,376	624,653
Other British	4,298	6,051
Dutch	6,777	5,494
Hongkong	12,135	9,809
Siam	5,326	4,804
Turkey in Asia	2,916	1,474
Total	2,132,349	$800,531
Africa:		
British Africa—West	24,122	$11,194
Total	24,122	$11,194
GRAND TOTAL	67,234,256	$49,878,366
Total, 1903-04	59,015,851	$40,444,250
Total, 1902-03	55,010,511	30,436,710
Total, 1901-02	50,413,481	24,899,230
Total, 1900-01	55,275,529	28,455,383
Total, 1899-00	49,377,138	31,376,867
Total 1898-99	51,063,066	31,707,620
Total, 1897-98	46,055,497	25,386,010
Total, 1896-97	35,574,449	17,457,976
Total, 1895-96	36,774,440	16,603,020

II.—Imports of Manufactures of India-Rubber, by Countries.

[+ Indtcates Increase; — indicates Decrease; compared with preceding year.]

FROM—	Value.
Austria-Hungary	$ 38,805+
Belgium	29,634+
France	332,250+
Germany	827,452+
Italy	1,286—
Netherlands	5,429+
Russia on Baltic and White seas	32,990—
Switzerland	1,579—
United Kingdom	115,298—
Quebec, Ontario, Manitoba, etc.	2,898+
British Columbia	103+
Hongkong	536—
Japan	496—
British Australasia	247+
Other Countries	61—
Total, 1904-05	$1,389,004
Total, 1903-04	$821,826
Total, 1902-03	665,972
Total, 1901-02	449,756
Total, 1900-01	474,663
Total, 1899-00	564,083
Total, 1898-99	379,309

III.—Imports of Crude India-Rubber, by Customs Districts.

AT—	Pounds.	Value.
Baltimore	25,000	$ 4,247
Boston and Charlestown	2,407,631	1,620,876
New York	64,193,170	47,872,421
New Orleans	436,813	285,551
Saluria, Tex	52,634	24,022
San Francisco	101,051	56,983
Chicago	7,294	5,770
Niagara, N. Y	1,700	1,344
Vermont	7,358	6,034
Other ports	1,905	1,246
Total	67,234,256	$49,878,366

IV.—Imports of Manufactures of India-Rubber, by Customs Districts.

AT—	Value.
Baltimore	$ 8,089
Boston and Charlestown	87,043
Fall River, Mass.	2,982
Newport News, Va	997
New York, N. Y	1,225,898
Philadelphia	15,852
Providence, R. I	2,436
Galveston	603
New Orleans	993
Alaska	886
Hawaii	909
Los Angeles	1,695
San Francisco	14,030
Chicago	18,964
Cuyahoga, Ohio	730
Vermont, Vt	1,809
Kansas City, Mo.	614
St. Louis	2,506
Porto Rico	510
Other New England ports	766
Other New York ports	820
All other ports	1,320
Total 1904-05	$1,389,064

V.—Exports of Manufactures of India-Rubber (and Gutta-Percha), by Customs Districts.

FROM—	Belting, Packing, and Hose.	Boots and Shoes.	All Other Rubber
Bangor, Me	$ 1,946	$ 1,221	$ 2,776
Boston and Charles'n	10,291	439,471	268,668
New York	645,181	613,746	1,359,145
Passamaquoddy, Me	2,478	3,216	559
Arizona	13,711	929	8,176
Paso del Norte, Tex	24,246		21,901
Saluria, Tex	15,795	54	13,310
Alaska	732	34,211	10,028
Puget Sound	19,882	11,437	33,322
San Francisco	118,442	55,177	202,493
Detroit	18,788	370	43,810
Champlain, N. Y	3,637	130	125,978
Memphremagog, Vt	10,639	422	14,145
Niagara, N. Y	14,720	3,039	136,472
Vermont, Vt	33,723	47,225	126,862
N. and S. Dakota	7,158	3,373	16,267
Other ports	22,631	321	198,619
Total	$994,100	$1,214,342	$2,572,375

GUTTA-PERCHA.

I.—Imports of Manufactures of Gutta-Percha, by Countries

FROM—	Value.
Austria-Hungary	$ 49
Belgium	11,416
France	2,983
Germany	67,740
Netherlands	13,753
United Kingdom	21,452
Japan	305
Other countries	87
Total, 1904-05	$117,735

II.—Imports of Crude Gutta-Percha, by Countries.

FROM—	Pounds.	Value.
France	832	$ 825
Germany	166,773	74,233
Netherlands	2,800	616
United Kingdom	146,525	42,478
West Indies—British	77,947	23,783
Colombia	128	41
Guiana—British	87,742	35,497
—Dutch	43,298	18,667
British India		
Straits Settlements	139,112	14,348
Total, 1904-05	665,217	$210,188
Total, 1903-04	424,617	$174,953
Total, 1902-03	316,290	222,400
Total, 1901-02	525,747	252,329
GUTTA-JULETONG (FONTIANAK).		
United Kingdom	19,977	$ 1,005
Straits Settlements	19,032,785	639,239
Dutch colonies	15,285	546
French colonies	36,864	529
Total, 1904-05	19,104,911	$641,319
Total, 1903-04	14,887,416	$430 231
Total, 1902-03	13,964,817	345,431
Total, 1901-02	16,850,821	501,418

RUBBER SCRAP.

Quantity and Value of Imports, by Countries.

FROM—	Pounds.	Value.
Belgium	32,413	$ 1,303
Denmark	54,645	3,112
France	837,975	46,023
Germany	2,277,221	118,840
Italy	5,952	399
Netherlands	13,450	799
Russia—Baltic Sea	4,358,583	259,206
Russia—Black Sea	2,429,999	142,637
Norway	402,634	21,078
Sweden	584,767	34,424
Turkey in Europe	473,521	27,860
United Kingdom	1,367,262	133,867
Nova Scotia, N. Brunswick	465,651	21,671
Quebec, Ontario, Manitoba	2,097,265	103,415
British Columbia	61,501	2,207
Newfoundland, Labrador	22,698	1,276
Mexico	18,389	353
Miquelon, Langley	1,383	64
Cuba	53,478	2,916
Venezuela	250	10
Turkey in Asia	15,050	989
British Australasia	1,700	70
Total, 1904-05	15,575,214	$953,439
Total, 1903-04	20,270,970	$1,164,785
Total, 1902-03	24,659,894	1,516,137
Total, 1901-02	22,894,900	1,437,290
Total, 1900-01	15,235,236	988,316

RECLAIMED RUBBER.

Value of Exports, by Countries, for Four Years.

TO—	Value, 1901-02.	Value, 1902-03.	Value, 1903-04.	Value, 1904-05.
Austria-Hungary	$ 70	$ 481	$	$
Belgium	1,250	1,084	1,151	9,188
France	38,310	13,932	26,398	38,818
Germany	20,191	19,425	55,739	30,844
Italy	12,291	11,284	20,225	18,744
Netherlands	6,550	9,049	6,932	24,705
Denmark	2,809			1,253
Russia		418		
Spain	5,552	1,774		
Sweden-Norway	18,318	215,904	8,442	10,394
Great Britain	220,844	129,216	380,208	402,830
Canada	143,276	1,268	212,310	163,154
Mexico	42			
Japan	175	85	1,410	13,147
Australia		566		4,100
Other lands	40		29	198
Total	$569,698	$404,586	$712,835	$727,847

EXPORTS OF AMERICAN RUBBER GOODS.

FISCAL YEAR ENDED JUNE 30, 1905.

EXPORTED TO—	Belting, Packing, and Hose.	Boots and Shoes. Pairs.	Boots and Shoes. Value.	Other Goods Value.	Total Value.
EUROPE:					
Austria-Hungary	$ 1,044	507	$ 621	$ 3,925	$ 5,590
Azores, Madeira Islands	...	397	348	124	472
Belgium	4,476	385,756	151,451	29,279	15 205
Denmark	2,422	20,303	11.892	5,729	10 043
France	17.485	1,189	677	44,507	62,669
Germany	27,615	344 688	148,183	172,943	348,741
Greece	....	48	26	24	50
Italy	1,339	67,230	35,321	59,174	95,840
Netherlands	744	8 999	4,124	49,248	14,116
Portugal	....	212	615	25	641
Roumania	3,536	...	....	21	3,557
Russia on Baltic Sea	937	130	114	...	1,051
Russia on Black Sea	212	....	....	....	212
Spain	964	43,041	20,834	4.918	26,716
Norway	2 495	5,142	2 967	1.690	7,142
Sweden	2,080	20 916	12.031	8,720	22,831
Switzerland	2,601	5.266	2,783	1,045	6,429
Turkey in Europe	...	115,361	48,829	....	48,829
United Kingdom	99,461	755,246	338,778	853,959	1,292,194
Total, Europe	$164,311	1,775,553	$779,505	$1,236,431	$1,960,828
NORTH AMERICA:					
Bermuda	$ 1,225	18	$ 19	$ 1,059	$ 2,303
British Honduras	503	6	15	100	618
Nova Scotia, New Bruns.	11,949	19,762	19,437	10.432	41,818
Quebec, Ontario, Manitoba	94,780	88,726	85,505	628,896	809,181
British Columbia	33,861	5.131	13.330	18,486	65.677
Newfoundland, Labrador	5,461	43,028	31.215	3,301	39,977
Costa Rica	7,063	29	33	2,905	10.301
Guatemala	5,672	84	50	1,138	6,850
Honduras	1,791	24	16	962	2,769
Nicaragua	3,823	159	99	9.5	4,877
Panama	15.031	828	492	8,554	24.077
Salvador	4,303	....	...	3,652	7,955
Mexico	140,244	3,455	2,965	123.262	168,501
Miquelon, Langley, etc	36	2,889	3.134	....	3,170
West Indies—British	7,148	2.234	1,399	5,131	13 668
Cuba	104,166	5,577	5,898	94,821	204,885
Danish	669	....	....	246	915
Dutch	399	....	....	496	894
French	....	....	....	57	57
Haiti	1.261	74	126	707	2 094
Santo Dom.	1,694	53	65	1,175	2,934
Total, North America	$441,079	172,077	$263,848	$906,734	$1,421,420
SOUTH AMERICA:					
Argentina	$17,857	3.979	$ 2,246	$ 11,979	$ 33,082
Bolivia	....	...	....	70	70
Brazil	3,857	15,678	6,923	34,015	46,795
Chile	8,414	204	273	16,597	25,284
Colombia	2,730	3,268	2,032	5,572	10,334
Ecuador	28,383	264	148	1,569	30,097
Guiana—British	374	4,554	2,163	337	2,874
Dutch	250	30	12	305	567
French	....	....	....	336	336
Peru	8,146	503	1,617	15,153	24,916
Uruguay	....	1,068	476	2.475	2,951
Venezuela	2,891	399	169	5,670	8,731
Total, South America	$72,892	29,988	$18,056	$94,078	$176,037
ASIA:					
Chinese Empire	$10,903	3,903	$4 626	$12,569	$28,098
East Indies—British India	6,900	1,163	955	8,629	16,484
Sts. Sett'mts	899	42	74	3,883	4,856
Dutch	25	...	...	2,215	2,240
Hongkong	1,638	5,384	4,425	9,026	15,390
Japan	36,532	102,821	63,064	160,141	258,737
Korea	1,586	48	95	966	3,547
Russia, Asiatic	....	2	7	....	7
Siam	....	12	38	199	237
Turkey in Asia	....	16,149	7,829	...	7,829
Total, Asia	$57,483	129,524	$81,099	$197,628	$337,428
OCEANICA:					
British Australasia	$ 84,258	251 588	$155,699	$ 72,715	$312,672
All other British Oceanica	20	9	21	24	65
French Oceanica	210	213	186	556	952
German Oceanica	....	...	....	231	231
Philippine Islands	29,548	9,302	7,419	30,696	67,663
Total, Oceanica	$114,036	271,112	$163,325	$104,222	$381,583
AFRICA:	$ 5,074	250	$ 78	$ 321	$ 5,473
British Africa—West	106,037	12 129	8,343	26,883	141,263
South	....	....	....	5	5
East	....	....	....	21	21
Canary Islands	29 226	6	3	6,720	35,949
Portuguese Africa	852	....	....	832	1,684
Turkey in Africa—Egypt	....	....	....	....	....
Total, Africa	$141,189	12,385	$8,424	$34 782	$184,395
GRAND TOTAL	$994,100	2,390,539	$1,214,342	$2,572,378	$4,780 817
Grand Total, 1904	880,010	2,310,808	1,086,364	2,469,750	4,436,124
Grand Total, 1903	819,985	2,207,401	1,056,491	2,299,875	4,176,351
Grand Total, 1902	634,146	2,594,708	1,046.315	1,781,941	3,462,402
Grand Total, 1901	565.726	1,450,100	724,015	1,727,527	3,017,268
Grand Total, 1900	541,859	767,104	429,746	1,405,212	2,367,788

RUBBER INTERESTS IN EUROPE.

RECOVERY FROM THE FIRE AT HARBURG.

THE new factory buildings of the Vereinigte Gummiwaaren-Fabriken Harburg-Wien, erected to replace those destroyed by fire on October 7, are being rapidly pushed to completion. The managing director, Mr. Louis Hoff, with his usual energy, is removing all obstacles and making the contractors rush in a manner that is new to their experience. There are three new five-story brick buildings, of modern mill construction, respectively 96, 100, and 110 feet long, and each 40 feet wide. They will be used for the manufacture of motor tires and boots and shoes. Coincident with this work is the erection of a magnificent central power station, in which will be installed two steam turbins of 1000 HP. each, the contract under penalty reading that they shall be running on January 15. A similar contract calls for the completion of the three factory buildings by February 15.

IMPROVED PROFITS OF THE SILVERTOWN COMPANY.

THE report of the India-Rubber, Gutta-Percha, and Telegraph Works Co., Limited, for the year ending September 30, presented at the annual meeting in London, December 19, shows after provision for doubtful debts, a net profit of £51,729 [=$251,739.18]. The gross trading profits were greater than in any other year with the exception of 1903. The directors, therefore, were enabled to recommend a dividend, making with the *interim* dividend already distributed, a total of 10 per cent. for the year, the rate which has been paid for a long time past, with the exception of last year, when the rate was only 5 per cent. The amount carried over is £55,003, against £53,274 last year. The general business of the company shows an increase compared with last year, and although the price of raw material is still very high the fluctuations have not been great and, therefore, better prices have been obtained for manufactured goods. The cable department, besides having other smaller work in hand, is engaged in the manufacture of 1300 nautical miles of submarine cable for the Commercial Pacific Cable Co. (New York), which will be laid by the company's cable steamer *Silvertown* between Shanghai and Manila, in March next. Major Leonard Darwin has been elected chairman, in place of the Hon. Henry Marsham, who now finds it necessary to reside abroad during the greater part of the year.

THE CONTINENTAL RUBBER WORKS.

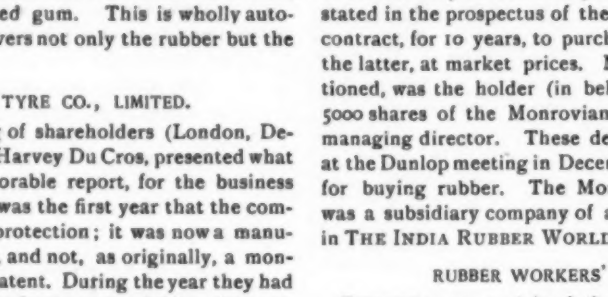
FEW people know what a tremendous plant is that of the Continental Caoutchouc- und Guttapercha Co. (Hannover, Germany). Indeed, figures hardly tell the story. The buildings, however, have a street frontage of 700 feet, and a rear frontage of more than 1500 feet, being located on a triangular shaped plot. The factory employs 4200 hands and uses many thousand dollars worth of rubber daily. Of course the most important product is the manufacture of tires for automobiles and cycles. That, however, is but one department of the work carried on.

In playing balls, for example, the press room has a capacity of 6000 dozen a day. One press mold (working on small balls, of course) turns out 40 dozen at a heat. There are in this press room 100 of these press molds, covering all of the stock sizes of balls made. As another example of the capacity for work, it might be mentioned that the company can turn our 30,000 feet of garden hose daily, 8500 bicycle tires, and 800 automobile tires, and can equip 25 commercial vehicles a day with their solid tire. Germany being a coffee drinking rather than a tea drinking country, the employés are daily served with that beverage, which is made in a room fitted with huge tins, the daily consumption being 750 gallons.

The new reclaiming plant of the Continental company is now completed. It is situated some 10 miles out of Hannover, on the river Leine, where there is ample water for all purposes, and also plenty of room on the shore for building expansion. The factory is up-to-date in every respect, the process of reclaiming being the Marks, for which the Continental have a license. A special process that is run in the building that is not a part of the reclaiming plant is the extraction of rubber from cloth scraps covered with unvulcanized gum. This is wholly automatic in its operation, and recovers not only the rubber but the fabric as well.

DUNLOP PNEUMATIC TYRE CO., LIMITED.

AT the ninth annual meeting of shareholders (London, December 12), the chairman, Mr. Harvey Du Cros, presented what the directors regarded as a favorable report, for the business year ending September 30. It was the first year that the company had been without patent protection; it was now a manufacturing and trading company, and not, as originally, a monopoly controlling an important patent. During the year they had been compelled to sell their bicycle tires at 5 shillings less per pair; the average cost of rubber had been 10⅝ pence per pound more than the preceding year; but by reason of improved processes and methods the strictly manufacturing profits had been £144,000 against £157,000 from the same source the year before. (There are now no longer any royalties in respect of patents.) And he thought that "rock bottom" had been reached, so that coming years would show an improvement. The company were turning out a good motor tire, and were unable to keep up with their orders, but an additional factory was well under way. Mention was made of the good showing of their tires at the Vanderbilt Cup races, near New York, in October. They expected a large business in connection with the introduction of motor 'buses, in London and elsewhere. It was stated that arrangements had been made for buying their crude rubber for the next 10 years, on particularly favorable terms. The position of the company had been improved by the purchase and retirement of £620,000 in debentures, at a profit to the company of £15,950. Plans were still under discussion for reorganizing the company, with a view to eliminating from capital account the sum of £3,894,000 for "good will," which had been figured in the assets from the beginning. There had been delay, however, in finding a plan upon which all classes of shareholders could agree as being equitable. The dividends for the year had amounted to £89,749 4s. 5d, and the interest on debentures £14,566 0s, 11d. [See THE INDIA RUBBER WORLD, October 1, 1905. page 24]



FACTORIES OF THE BERLIN-FRANKFORT COMPANY.

THE DUNLOP COMPANY IN LIBERIAN RUBBER.

ALFRED DU CROS, of the Dunlop Pneumatic Tyre Co., Limited, is a member of the board of The Liberian Rubber Corporation, Limited, with a capital of £270,000 [=$1,313,955], floated in London early in December, to acquire from the Monrovian Rubber Co., Limited,, a concession from the Liberian government, granting a monopoly in the export of rubber from that republic for 26 years. The Monrovian company already have rubber trading stations at work, and will also turn over a coffee plantation and other assets. Sir Harry H. Johnston, G. C. M. G., K. C. B., one of the highest authorities on African conditions, and Mr. Alexander Whyte, long employed by the British government as a botanical expert in Africa, unite in describing the rubber resources of Liberia as of great value—excelling, perhaps, those of Lagos. The Lagos rubber tree (*Funtumia elastica*) is found there, together with valuable species of *Landolphia*, and Sir Harry Johnston is of the opinion that 500 tons of rubber may be obtained yearly. The Dunlop company are stated in the prospectus of the Liberian company to be under contract, for 10 years, to purchase the entire rubber output of the latter, at market prices. Mr. Alfred Du Cros, above mentioned, was the holder (in behalf of the Dunlop company) of 5000 shares of the Monrovian Rubber Co., Limited, and its managing director. These details will explain the reference, at the Dunlop meeting in December, to the arrangements made for buying rubber. The Monrovian company, by the way, was a subsidiary company of another corporation, mentioned in THE INDIA RUBBER WORLD, April 1, 1904 (page 233).

RUBBER WORKERS' STRIKE AT MUNICH.

DURING a recent visit of the Editor of THE INDIA RUBBER WORLD to Munich, Bavaria, he found a strike in progress at the important rubber works of Aktiengesellschaft Metzeler & Co., which trouble, according to later reports, has come to an end. It appears that on November 9 four workmen in the surgical goods department were dismissed on a charge of having caused trouble, whereupon they appealed to the labor federation, which demanded that the men be reinstated. The company refusing, a general strike in the factory was ordered on November 17, by the Fabrik-, Land- und Hilfsarbiter. No basis for the settlement of the trouble could be arrived at between the company and the labor organization, and Judge Pressner was invited by both sides to arbitrate. His decision was in favor of the strikers, the award involving a general increase in wages.

AN OLD GERMAN RUBBER FACTORY.

THE Berlin works of the Berlin-Frankfort India-Rubber Co. (Vereinigte Berlin-Frankfurter Gummiwaaren-Fabriken) situated on the river Spree, are among the oldest in Germany, having been established in 1849 by an Englishman named Elliott. This name is still kept in existence through certain specialties which they make; for example, the "Elliott" tire. The factory buildings are substantial, old fashioned in the extreme, and as Director Spannagel admits, not up to date, but nevertheless the business is well conducted and very profitable. One of their specialties is cut sheet, of which they make great quantities, particularly for the great variety of colored tubing which goes to Spain and Latin American countries, the Latin blood showing in its desire for bright colors wherever obtainable. They also make baby carriage tires by the ton, and a great variety of surgical articles. The company, of course, have other plants, that, for example, at Gelnhausen being modern and up to date in every respect, and turning out a fine grade of automobile tires and much speciel work in mechanical rubber lines. Of this factory Dr. Carl Poppe is the managing director. The company's third factory at Grottau, in Bohemia (near the Saxon frontier), dates from 1892.

TIRES AT THE OLYMPIA MOTOR SHOW.

THE fourth annual exhibition of automobiles at Olympia Hall, London, occurred November 18–25. The Society of Motor Manufacturers and Traders, who run the Olympia exhibition, certainly gave the world at large a magnificent show. To even catalogue the great variety of automobiles, motor omnibuses, tires, and other accessories, would cover pages. To attempt to picture the completeness of the exhibition, the fine workmanship shown in the cars, the excellent taste portrayed in the arrangement of the displays, the great crowds that attended, and the financial success that accrued, would fill volumes, and even then it is questionable if justice would be done to the subject. Certain it is that it was proved that the show was held at exactly the right time of the year, both for purchaser and for manufacturer; nor can it be doubted that many thousands of pounds that normally would have gone to the Paris show and the American exhibitions were gathered in by the alert Britishers. This paper is, of course, specifically interested in the tires, of which there were a great variety, well displayed, not only in the spaces reserved for the companies displaying, but everywhere throughout the building were vehicles equipped with certain types of tires, thus giving really a multiple view of the most important makes.

At the very excellent exhibit of J. W. & T. Connolly, Limited, there were shown two Goodrich side wire tires, one of which had been run 13,000 and the other 18,000 miles, on heavy commercial vehicles. The tires were still good, and had worn down with wonderful evenness. A curious feature of one of them was a jagged fragment of flint that had bedded itself in the tire so firmly that it could not be drawn out—an eloquent comment on the sort of roads that the tire had been up against, still remaining intact.

As was to be expected, cars, tires, and accessories that were approved by royalty were made much of by the exhibitors. It is not, of course, remarkable, for one to be appointed "Purveyor to the King," or "Dressmaker to the Queen," but for the first time in the history of the rubber business has one been appointed "Manufacturer of rubber tires to the establishment of his Majesty's stables." This signal favor fell to Mr. J. M. MacLulich, of the Sirdar Rubber Co. A copy of his appointment, signed by the Duke of Portland, and handsomely framed, adorned the Sirdar exhibit and undoubtedly had its effect. It does not seem, however, that, in giving this appointment, William John Arthur Charles James, Duke of Portland, bound himself not to use any other tires, and it therefore happened that the Collier Tyre Co. has a picture of a magnificent automobile in which was seated his Majesty Edward VII, and, from the look of content on his face, approving the Collier tires with which the vehicle was shod.

Mr. James Iddon, M. I. M. E., of Iddon Brothers, the rubber engineers, was present at the exhibition, studying the rubber part of it with an interest that too few rubber engineers show.

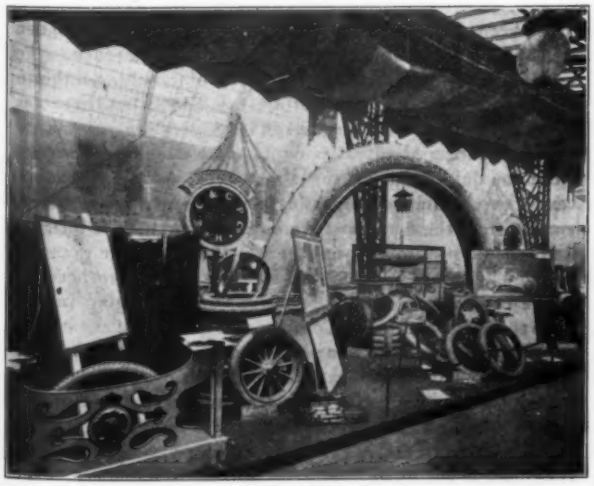
The Collier Tyre Co., Limited, had a notable show, General Manager Williams appearing apparently from nowhere whenever a customer approached the stand. Most of the officers of the company visited the show, among them being Mr. James E. Baxter.

One of the best exhibits was that of the Continental Caoutchouc and Gutta-Percha Co., the huge tire that half encircled it drawing much attention. Besides the London manager, several of the officers from the Hannover factory were present, notable among them being the Messrs. Seligmann and Tischbein.

The "Palmer cord" tire, made by the India-Rubber, Gutta-Percha, and Telegraph Works Co., Limited, of Silvertown, showed up well, the practical demonstration of the strength of a single strand of Palmer fabric which was shown by its holding up many tons of iron weights appealing to all and not alone to those who are particularly interested in tires. Mr. Christian H. Gray, managing director of the company, was present the last day of the show and evidently satisfied with the way business was coming to the exhibit.

David Moseley & Sons, Limited, showed their motor tires and drew especial attention to their rim fastening, by means of a young lady attendant who put on and took off tires in a very brief space of time. Messrs. David and Oswald Moseley were both present part of the time, as was also Mr. Arthur E. Friswell, superintendent of the tire department at Manchester.

In variety of tires, The North British Rubber Co., Limited were preëminent, showing several new types of tires, particular-



CONTINENTAL CAOUTCHOUC CO.'S EXHIBIT.

NORTH BRITISH RUBBER CO.'S EXHIBIT.

ly ones devoted to heavy traction. Mr. Stewart came down from Edinburgh to attend the show, but so many business engagements intervened that he was very rarely seen at his company's exhibit.

In connection with the tire business were many special devices, perhaps the most important being the tire vulcanizing appliances manufactured by Harvey Frost & Co. At their booth actual repairing was done for crowds of interested visitors and presumably many sales made.

[FROM ANOTHER SOURCE.]

CONSIDERING what London weather can be in November, it must be admitted that things were propitious. Certainly there was some fog and also some rain during the week, but the dreaded black fog which works such havoc with London traffic was absent and there was nothing to hinder the attendance of visitors. In fact, the attendance, especially in the body of the hall, was uncomfortably large, and locomotion was attended with difficulty. As far as this Journal is concerned, interest may be considered as centering in the South gallery, where the various tire exhibitors had their location, and these notes will be limited to this part of the show. Price lists and descriptive booklets abounded and it is noticeable how the information given to purchasers becomes year by year not only more bulky but more technical. It is interesting to note the varying styles affected by the compilers of this literature; in one case it is matter of fact and sedate in tone without any extravagance in claims or any pomposity in diction; in another attention is perpetually being drawn to the fact that the firm's goods are not only the best that can be made but are also superior to those of all competitors.

SIRDAR RUBBER CO.'S EXHIBIT.

Most of the men prominently connected with the tire manufacture were to be seen at one time or another during the week. Perhaps the most notable absentees among the British exhibitors were members of the Charles Macintosh & Co. firm, whose stand was under the management of Mr. Lees, the head of their London establishment. Mr. J. E. Hopkinson was constant in his attendance to explain to enquirers the advantage of using his firm's tires. These are of the solid variety and differ from others mostly in their mode of attachment to the wheel. The double continuous tread of this tire allows of considerable wearing away without at all impairing its efficiency and it has been found very satisfactory for motor 'buses, lorries, vans, etc. Among other solid tires on view was the De Nevers patent grooved tire. I had hoped to see Count de Nevers, but was not so fortunate. According to his son they are selling through Messrs. Liverredge & Sons increasing quantities of these tires. Though primarily a solid tire, the transverse grooves on the surface give it the advantages of a pneumatic, and if the immunity claimed from side slip is not exaggerated, the tire certainly has a great deal to recommend it. The manufacture is carried on at the mills of the De Nevers Rubber Co., at Earlsfield. The Sirdar tire was personified in Mr. MacLulich and its merits were therefore not hidden under a bushel. The Sirdar Rubber Co. have moved from their modest home at Limpley Stoke and taken more commodious premises at Bradford-on-Avon.

An important part of the exhibits in the tire section related to anti-skid devices, though there was really nothing of novelty, or anything that indicated that the period of suspense and trial was about to be speedily ended. Old friends such as the Parsons chain device and the various metal studded chrome leather bands were on view, but this type has been with us now for some time. Perhaps the most notable advance is the new Michelin non-skid, which is not a separate band of studded leather, but which has the leather band embedded in the rubber tread, It is noticeable that the bigger tire manufacturers, such as Dunlop, Moseley, Continental, North British, and others say that they cannot countenance any complaints with regard to their tires where the various anti-skid devices have been attached to them. This is an important matter, and must, I should think, militate against the sale of the chain and studded band type. The tendency undoubtedly will be to have the anti-skid part and parcel of the original tire as is now done by Dunlop, Michelin, and the Continental company.

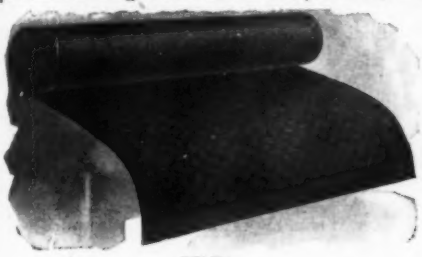
As a sort of counterblast to the notices issued by the tire manufacturers we have the statement of the Lamson leather treads people, for example, that they cannot be responsible for any defects in the rubber in the tires to which they fix their non-skid treads. It is pretty well evident, therefore, that the purchaser who does not get the complete article from one firm will have but little chance of redress if the tire turns out unsatisfactory as each side is sure to assert its innocence and blame the other. Of course, where a particular firm claims to have solved the problem by a patented device which can only be fitted to their own tires, this firm should get all the business until a serious competitor arises.

It has been remarked in several quarters that the London press gave a considerable amount of attention and space to the Olympia show—in fact, in great excess of anything hitherto done in this respect. This certainly is a fact, but there was nothing particularly disinterested in it. A *quid pro quo* was obtained in the form of advertisements and a common feature of the London dailies during the show week was a big headline covering two columns of reporting, with side columns of advertisements from the firms who were receiving notice. I imagine the papers did pretty well out of it. Moreover, the occasion was seized by company promoters to bring out the prospectuses of three or four motor omnibus companies, bringing further grist to the newspaper mill. Compared with those of some years ago, the cycle and motor shows of to-day are looked upon by the exhibitors more as a means of doing business with dealers than as affording interest to individual members of the public, who visit the shows as a matter of general interest or perhaps merely to satisfy curiosity. Some complaints regarding the scant courtesy accorded by stall attendants to members of the latter class have found expression in print.

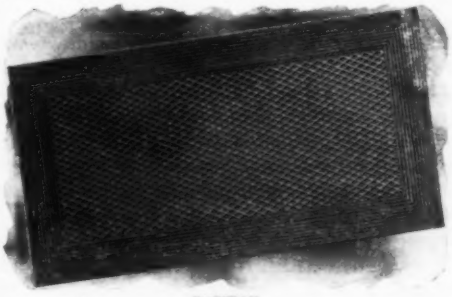
NEW GOODS AND SPECIALTIES IN RUBBER.

TWO ATTRACTIVE NOVELTIES IN MATTING.

WHEREAS formerly the chief thought of the manufacturers of rubber mats and matting was to produce articles of utility, at a cost which would induce liberal buying, there is now evident a disposition to produce such goods in attractive patterns, indicating a demand on the part of the users for something that will look well and now and then possess a distinctive novelty. In this line may be mentioned two new articles illustrated in accompanying cuts. The first is described as the "Delta" matting. It is a runner which is as handsome in appearance as a strip of carpet, and suitable for the finest store or for an apartment house. It is light in weight and easily handled, but made of a compound which renders it durable. It is understood to be no more expensive than the plain corrugated runner. It is carried in stock in the standard width of 27 inches and in 50 yard rolls, but can be furnished in any other length wanted.——The second article illustrated is the "Puritan" mat—a household door mat. This is a distinct departure from the old style mat. It is made with a deep diamond cell body and corrugated border. The cells clean the shoes thoroughly and retain the dirt, thus preventing the soiling of the floor or carpet beneath. While intended primarily for private residences, this mat is equally adaptable for store or office use. It is made in two sizes: 17 × 31 inches and 21 × 36 inches. [The Peerless Rubber Manufacturing Co., New York.]



DELTA.



PURITAN.

NOVEL PERFUMERY BOTTLE.

AMONG the novelties put out for the holiday trade recently was one which is understood to have been a particularly good seller. It was nothing more or less than a small perfumery container made in the shape of a nursing bottle, as indicated in the illustration. The little bottle was not only attractive in appearance, but filled with a good quality of extract. The novelty possessed the quality of originality, and in addition that of humor, which afforded fun making possibilities. It could be retailed at 10 cents. [American News Co., New York.]

A NEW TENNIS SOLE FROM CANADA.

THE substantial and progressive character of the rubber industry in Canada is indicated by the continual production of novelties by the various factories in the Dominion, some of which are especially attractive. In this category deserves to be noted a "tennis" sole in a new pattern, shown in the illustration, which is used exclusively on the "Daisy" line of sporting shoes—yachting, tennis, bowling, lacrosse, and gymnasium—manufactured for the 1906 trade by The Berlin Rubber Manufacturing Co., Limited, (Berlin, Ontario).

DR. TULLAR'S FAMILY SYRINGE.

THE improved fountain syringe shown in the illustration has the new Tullar shaped bag with large opening for easy filling and cleansing. It it fitted with an extra large outlet, and special tubing. The curved vaginal pipe has no central aperture, and is made to discharge a ball or cup shaped spray. The outlet from this bag permits 3 quarts of water to be discharged in one minute. The straight vaginal pipe has twenty outlets. The adult and infant enema pipes are ball pointed, with three outlets, arranged to discharge obliquely. This design of pipe is considered a great improvement over the one outlet enema pipes supplied with the old style syringes. The general design of this syringe is new, the stock and workmanship first quality, and it is in good demand with the high class trade. [The Seamless Rubber Co., New Haven, Connecticut.]

TWO NEW PACKINGS.

THE basis of a new packing called "Ima" is a vegetable fi derived from Mexico and subjected to a process developed by Mr. E. R. Ware, of Worcester, Massachusetts, an engineer impressed with the desirability of a steam or pump packing that would be durable and would not harden or absorb oil or water. Having obtained by experimenting an oil proof and acid proof compound, he next began to look for a satisfactory fiber to use in connection with it, finally selecting a cotton like fiber which he discovered in Mexico. A company has been incorporated to make the new packing, with a factory at Worcester.——The same company will manufacture "Carbo-Asbesto," as a substitute for asbestos packing, which, it is claimed, will stand the heat of 600° F., and is intended for use particularly in gasoline automobiles. The chemical compound involved will be similar to that used in "Ima" packing. [The Ima Packing Co., No. 29 Broadway, New York.]

GOODRICH CIRCULAR ERASER.

THE making of a compouud that will result in good service in an eraser is far from being the simplest problem in the rubber industry. An eraser which has yielded good results for ink or pencil, and which is especially adapted to typewriter work, is shown in the accompanying engraving. These erasers are packed one dozen in a box and one gross to the carton. [The B. F. Goodrich Co., Akron, Ohio.]

THE "TUBE CORE" GOLF BALL.

NEW patterns of golf balls continue to be produced, particularly in Great Britain. Among the latest is that termed the "Tube Core." This is made without any hard core, the material beneath the cover being entirely formed of one length of rubber tubing rolled under high tension. It is claimed that by this method the flight of a cored ball is combined with the putting qualities of a gutta-percha ball, while hacking or splitting is reduced to a minimum. The effort to increase the durability of cored balls seems, by all reports, to have had a considerable amount of success in this particular instance, for the tube core ball has withstood without injury the severe test of lengthy play. [Martins, Limited, Birmingham, England.]

A RUBBER TEAPOT SPOUT.

IT is very natural that a tea-drinking race such as the English should invent certain appliances for their needs that would not find any particular use among those having the tea habit in only a slight degree. Such an invention is the Mandarin pourer. This is really an artificial teapot spout, made of white rubber, designed to fit over a badly molded or broken nosed teapot, the pourer being so curved that the liquid throws away from the spout in a concrete stream. In order to obviate any taste or smell of the rubber, it is the custom to soak it in strong tea for some 24 hours. It is then applied to the teapot, and is said to have a quite general use, not, perhaps, among those who have the finest of tea services, but where pennies must needs be counted with care. The appliance is registered, but is not patented, and is to be found in rubber stores throughout the United Kingdom, in none of which is the inquiring foreigner likely to be told who manufactures it.

AIR CUSHION TYPEWRITER FEET.

THE device illustrated herewith is the result of experiments made by a practical operator, who for a long time had been studying ways and means to lessen the rumbling and hollow sound continually made by typewriters when in use. It is claimed for this simple pneumatic device that it will increase the life of a type writing machine, the speed of the operator, the ease of the operator, and the resiliency of the machine, and decrease the noise, the wear and tear both upon operator and machine, the slipping on or marring of costly desks, and the rumble of a machine when attached in a roll top desk. [The Typewriter Pedestal Co., Detroit, Michigan.]

RUBBER DEVELOPMENT IN PERU.

SEÑOR DON FELIPE PARDO, the new Peruvian minister to the United States, arrived at New York on December 21 from Colon, aboard the Royal Mail steamship *Orinoco*, with his bride, who formerly was Señora Teresa Barreda de Pardo, daughter of his paternal uncle. Señor Pardo speaks English and several other languages fluently. Another passenger by the same steamer was his brother, Señor Don Juan Pardo, whose mission is in connection with the completion of details for the forming of an important and extensive company for the working under a single control of some large rubber concessions in southeastern Peru, which are understood to be of very great value. The organization of the new company has been practically consummated, but a more definite statement at this time cannot be made public. The two gentlemen named are brothers of the president of Peru.

FACTS ABOUT COLORADO RUBBER.

A COMPANY in New York, expert in the extraction of rubber from shrubs, have lately carried out very exhaustive experiments in their own laboratories with the Colorado "rabbit weed." They were able to get from the weed just as it was gathered 1 per cent. in weight of rubber; after the dirt had been shaken off of the weeds and the leaves removed they got 3 per cent. of rubber. They further went very carefully into the cost of gathering the weed, and, finding out how many individual weeds it took to make a pound, and figuring exactly how many pounds a smart man could gather, working 10 hours a day. A careful analysis of the cost of gathering and the amount of rubber that could be extracted proved to them conclusively that there was not enough rubber present in the weed to pay for the cost of gathering it, let alone extraction.

THE GUAYULE FACTORY AT TORREON.

MANY newspapers in Mexico and a few in the United States have given much space to the Guayule rubber plant now being established in Torreon, Mexico, by the Continental-Mexican Rubber Co. (New York). Without cataloguing the many wild statements made, the following may be in order. The plant will not cover 23 acres, as has been published, but will consist of a building for storage of a shrub and extraction of rubber, some 400 feet long and 300 feet wide, one story high. This happens to be situated on a 100 acre plot purchased by the company, not because they intended to cover the land with buildings, but because land was cheap down there and they were able thus to get a right of way to two different railroads. The statement that John D. Rockefeller, Jr., is either president or director is an error, as the president is Mr. E. B. Aldrich, as chronicled in the October 1, 1905, issue of THE INDIA RUBBER WORLD.

INFLATED FOOTBALLS.—Where footballs are used for display purposes, either indoors or in show windows, but especially in the latter case, they should not be inflated, as deterioration is sure to result. Light and heat has a bad effect upon football bladders, cycle inner tubes, and other articles of thin rubber, which should preferably be kept in a dark place in a temperature of not over 70 degrees. A football inflated and hung near the ceiling of a store room, as they are frequently seen, from the tendency of heat to rise is subjected to a higher temperature than exists at the counter level and in a short time will suffer from its effects.—*Sporting Goods Dealer.*

NEWS OF THE AMERICAN RUBBER TRADE.

UNITED STATES RUBBER CO.—SPECIAL MEETING.

A SPECIAL meeting of shareholders of the United States Rubber Co. has been called to be held at their registered offices, at New Brunswick, New Jersey, on January 3, to consider an increase in the number of directors and to vote upon certain proposed amendments to the by-laws. The by-laws at present limit the number of directors to 19 and it is now deemed advisable to enlarge the board in order that it may include persons prominent in the affairs of the Rubber Goods Manufacturing Co. and familiar with its business. One of the proposed amendments is to provide that real estate or securities of corporations owned by the company may be sold or pledged with the assent of three-fourths of the stockholders in interest at a meeting of the company, instead of three-fourths of all the shares outstanding, as hitherto. Another of the amendments proposed has become desirable on account of there now being two classes of preferred stock, instead of one as originally.

BANQUET OF THE CANADIAN RUBBER CO.

THE first annual banquet given by the management of the Canadian Rubber Co. of Montreal to their wholesale distributers throughout the Dominion, at the Windsor Hotel, in Montreal, on the evening of November 28, formed an enjoyable climax to the series of business conferences in which these gentlemen had participated during the two days preceding. The tables were made attractive with floral decorations, and with specimens of the company's products in miniature, while the walls of the banquet room were hung with large and handsome reproductions of the favorite advertisements of the Canadian company. Mr. D. Lorne McGibbon, general manager of the company, presided, and after the attractive menu had had due attention, and the health of "The King," had been drunk, he called upon Mr. J. B. Learmont, the company's vice president, in the absence of Sir H. Montagu Allan, president of the company, who was prevented by illness from being present. Mr. Learmont gave credit to Mr. McGibbon for the suggestion of the conference and expressed his admiration of the spirit which had animatedits members. He dwelt upon the continued growth of Canada and its business, referring to the time when the Dominion would have a hundred million nhabitants, and even after this number had been doubled there still would be room for more. There were responses to the toast "Our Guests" from points as far remote as Winnipeg and Nova Scotia. Mr. Arthur Congdon, of Winnipeg, spoke of the marvelous growth of that city, where, in 1904, building permits were granted to the extent of $10,000,000, while in the first eleven months of 1905 they had amounted to $11,000,000. Though the new buildings were chiefly residences, there was still a scarcity of houses. Mr. Congdon referred to the conference of wholesale distributers as being very much like a family gathering, which he felt to be due to the spirit shown by the management of the company towards those having relations to it. This spirit was further referred to by Mr. John Lennox, of Hamilton, who had been buying the company's goods for thirty years, and said that he felt like a son of the company. Mr. M. D. Pride, of Amherst, N. S., said that while not a stockholder, he considered that from his dealings he was none the less a partner in the business. Mr. E. A. Wright, secretary-treasurer, toasted "The Ladies"; Mr. J. Morris Carroll, advertising manager of the company, proposed "The Press", which toast was responded to by the writers present; and Mr. Learmont proposed the health of the chairman (Mr. McGibbon) and Mr. M. C. Mullarky, manager of the boot and shoe department, paying a tribute to their progressive policy as a factor in bettering the position of the company.

BANQUET OF THE CANADIAN RUBBER CO. OF MONTREAL.
[General Manager D. Lorne McGibbon Proposing the Health of "The King."]

GOODYEAR TIRE AND RUBBER IN NEW YORK.

THE Goodyear Tire and Rubber Co. will remove shortly from their present New York location, No. 253 West Forty-seventh street, to the corner of Sixty-fourth street and Broadway. There they will occupy the whole of a new three story building which will have a 54 foot frontage on Broadway. The very large and commodious basement is to be fitted up as a most up-to-date repair shop where just as good work will be done as can be accomplished in any fully equipped rubber factory. The New York manager, K. B. Harwood, is working most enthusiastically to get the new quarters completely equipped at the shortest possible notice, and is not at all backward in averring that the Goodyear quarters are going to be the best tire quarters in existence.

AMERICAN MADE RUBBER FOOTWEAR IN GREAT BRITAIN.

AT the eleventh annual International Shoe and Leather Fair, in London, early in November, rubber footwear was prominently displayed, there being on exhibition the products of several factories on this side of the Atlantic. The United States Rubber Co., Lim-

ited—as the European branch is known—showed "Boston" and "Meyer" boots and shoes, together with a variety of tennis goods, and also leather soled rubber boots for sewer work and the like, and rubber proofed motor coats. A good display was made also by the London agents of the Hood Rubber Co., who are now making an active canvass of the European market. Mention must be made also of the extensive display made by The Gutta-Percha and Rubber Manufacturing Co. of Toronto, Limited, who recently opened a branch in London at 1, Finsbury square, in charge of Mr. C. E. Pillinger. Among the heel pad exhibits were shown the "Penna" goods which, while marketed under the name of a London house, are manufactured by the Pennsylvania Rubber Co.——The United States Rubber Co., Limited, have opened a storage warehouse in Liverpool, at Westminster chambers, Crosshall street, in charge of Mr. Neale, who has been connected hitherto with the company's London depôt.

POPE MANUFACTURING CO.'S PROFITS.

THE Pope Manufacturing Co. (Hartford, Connecticut), successors to the late American Bicycle Co. and the companies subsidiary to the latter, have made public their second annual report, for the fiscal year ending July 31, 1905. President Albert A. Pope reports that the liquidation of certain departments which it was deemed desirable to discontinue has been about concluded. The expenses connected with this work of reorganization during the year and the cost of maintenance of unoperated factories (alone amounting to $90,264.47) will not in future be a charge upon the company's business, thus permitting larger net earnings to be made. The net profit for the year was $87,219.95, against $50,992.69 for the preceding year. The gross sale of automobiles and bicycles during the year was $7,547,508, being an increase over the preceding year of $1,953,939. The current assets are reported at $3,992,418.20 and the current liabilities $1,182,725.20. It is stated that the amount of business done thus far in the new fiscal year considerably exceeds that of the corresponding months of the year preceding. [For the first annual report see THE INDIA RUBBER WORLD February 1, 1905—page 168.]

MECHANICAL RUBBER MANUFACTURERS ASSOCIATION.

THE executive committee of the Mechanical Rubber Manufacturers' Association of the United States, have arranged a banquet to be held at Sherry's, in New York, on January 18, to begin at 6.30 P. M., at which time it is understood that some matters of special importance will come before the members of the association. It is the earnest desire of the executive committee that each member of the association will be present, accompanied by one or more associates connected with his company. No one not connected with the association is to be invited, it being intended that this shall be strictly an association affair. There will be no charge for the dinner, the expense having been arranged for by the committee. The secretary, Mr. William Hillman, No. 59 Reade street, New York, desires to be informed as promptly as possible by all who may intend being present.

THE LEOMINSTER COMB INDUSTRY.

THE manufacture of horn and celluloid goods at Leominster, Massachusetts, continues to grow, as indicated by a recent increase in the number of factories and the enlargement of output of those long established. During the latter part of the year New York dealers in horn and celluloid combs, hair pins, and other ornaments were liberal buyers in Leominster, which has become one of the most important centers for the supply of such articles. Owing to the recent rise in the price of horn goods, some of the manufacturers looked for decreased buying, but there has been no such result to date, and some of the shops have been running overtime, in order to fill their orders promptly. The Viscoloid Co. will erect this winter an extensive new shop, of brick, two stories high, and 120 × 60 feet, for the increased manufacture of viscoloid, which is highly regarded in Leominster as a substitute for horn. The Leominster Comb Co. are planning a large new shop, which will be the largest horn hair pin factory in the country. Mrs. Amanda J. Cobleigh, of Leominster, said to be the only woman comb manufacturer in the United States, keeps 15 employés busy.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES	Common. Sales.	Common. High.	Common. Low.	Preferred. Sales.	Preferred. High	Preferred. Low.
Week ending Nov. 25	28,100	55¾	51⅛	4,025	112¼	108¼
Week ending Dec. 2	28,200	57	54	2,610	112	110
Week ending Dec. 9	18,875	55½	53⅝	1,600	110½	109
Week ending Dec. 16	35,695	57⅛	54⅝	4,500	112¾	110⅝
Week ending Dec. 24	13,150	55¼	52½	1,685	111¼	109¼

SECOND PREFERRED.

Week ending—	Nov. 25.	Dec. 2.	Dec. 9.	Dec. 16.	Dec. 23.
Sales	3,750	2,000	3,050	5,800	3,200
High	81	80½	80⅛	83¾	83¼
Low	77	78½	79¼	80¼	81½

RUBBER Goods Manufacturing Co.:

DATES.	Common. Sales.	Common. High.	Common. Low.	Preferred. Sales.	Preferred. High.	Preferred. Low.
Week ending Nov. 25	700	38¼	38	100	104⅞	104⅞
Week ending Dec. 2	1,200	39	38⅛	60	103½	103½
Week ending Dec. 9	—	—	—	200	106	105
Week ending Dec. 16	1,800	41	39¾	100	106	106
Week ending Dec. 24	700	41½	40⅜	100	105	105

NEW INCORPORATIONS.

THE Seward Rubber Co., November 23, 1905, under the laws of Connecticut; capital authorized $200,000; to begin business with $75,000 capital. Incorporators: William Seward (late vice president and general manager of the Hartford Rubber Works Co.) and Arthur L. Shipman, Hartford, Conn., and George D. Cochran, New York. A factory building has been secured at Berlin, Conn.; considerable machinery has been purchased and more ordered, and the organization is being rapidly perfected. The object is to manufacture rubber mechanical goods and solid vehicle tires, and it is expected that deliveries can be made by April 1.

=Harburg Tire Co. (New York city), December 16, 1905, under New York laws; capital, $20,000. Incorporators: Niel A. Weathen, New York; Millard C. Humstone and Rose A. Mackey, Brooklyn, N. Y. Object, to cover the tire business in America of the Vereinigte Gummiwaren-Fabriken Harburg-Wien, of Germany, who are now preparing to introduce their pneumatic motor tires on this side of the Atlantic.

=Knowlton Packing Co. (Boston), December 15, 1905, under Massachusetts laws; capital, $40,000. Edward R. Metcalf, president; C. W. Smith, treasurer. To continue the manufacture of the Knowlton molded ring packing and to add the manufacture of other rubber specialties. This business was established some 10 years ago, by Messrs. G. W. Knowlton and E. R. Metcalf, and three or four years later the interest of Mr. Knowlton was purchased by Mr. Metcalf, who has since continued in charge.

=The Wright Rubber Manufacturing Co. (Mansfield, Ohio), December 11, 1905, under West Virginia laws; capital, $1,000,-

000. Incorporators: E. E. Wright, E. T. S. Cliffe, N. G. Wright, C. M. Cliffe, Oscar A. Stuhldreher, A. J. Scherer, and M. E. Stuhldreher—all of Mansfield. The object is to erect a factory for making "artificial rubber" under the process of E. E. Wright, late of Pittsburgh, Pennsylvania, and to manufacture goods from the same—"probably starting with automobile and vehicle tires."

=Pneumatic Ball Tire Co., December 12, 1905, under the laws of New Jersey; authorized capital, $3,000,000. Incorporators: Frank A. Magowan, Brown McDonald, and Frank B. Adams—all of No. 15 Exchange place, Jersey City.

=Gaulois Tire Co. (New York city), December 7, 1905, under New York laws; capital, $500. Incorporators: Edward Stetson Griffing, New Rochelle, N. Y.; George A. Burkhard and John G. Craig, New York.

=Goodall Rubber Co., December 18, 1905, under New Jersey laws; capital, $50,000. Incorporators: F. D. Stovell, H. W. Goodall, and William S. Feeny. To do a jobbing business in Philadelphia.

=Rubber Pad Co., November 28, 1905, under Maine laws; capital $100,000. Incorporators: H. N. Hurd, H. A. Farrington, G. W. Cheny, and D. W. Perkins—all of Manchester, New Hampshire—and Horace Mitchell, of Kittery, Maine.

=Fulton Rubber Type, Ink and Pad Co., December 13, 1905, under New Jersey laws; capital, $50,000. Incorporators: Henry Schmidt, Elizabeth A. Schmidt, and William L. Hooper, all of No. 130 Fulton street, Elizabeth, N. J. To continue the business of the Fulton Rubber Type Co., having a factory at the address given.

=Ima Packing Co., November 24, 1905, under the laws of New York; capital $150,000. Objects, to manufacture at Worcester, Massachusetts, "Ima" and "Carbo-Asbesto" packings. Incorporators: George S. Terry (president), William H. Dowe (vice president), and Russell T. McCabe (secretary and treasurer)—all of New York.

=Shelby Rubber Co. (Shelbyville, Indiana), December 14, 1905, under Indiana laws; capital, $100,000. Directors: Daniel F. Randolph, John Meloy, Thomas J. Marshall, George C. Walker, Wilbur B. Wright, James R. Howe, and Olis S. Peck.

=Madeira Rubber Co. (Hyde Park, Mass.), December 19, 1905, under Massachusetts laws; capital $25,000. James F. Pring, president; Charles S. Prince, treasurer; John S. D. Everett, clerk. To succeed the Clarendon Rubber Co., incorporated July 29, 1904, by James F. Pring, formerly superintendent for S. Klous & Co., at the Boston Gossamer Rubber Works.

=The Pneumatic Eraser Co., Inc. (Owensboro, Ky.), November 25, 1905, under Kentucky laws; capital, $30,000. A. J. Turpin, president; E. W. Wood, vice president; G. E. Turpin, secretary and treasurer; Stewart Starling, manager. The object is to manufacture a rubber eraser for typewriter and desk use under United States patent No. 797,908, issued to C. E. McGill, and eventually to manufacture other rubber goods.

CANADIAN RUBBER CO. CHANGES OWNERS.

THE Canadian Rubber Co. of Montreal, has changed owners. It is announced that Major George W. Stephens, M. L. A., Mr. D. Lorne McGibbon, Mr. Alexander Pringle, and Mr. Shirley Ogilvie have purchased a controlling interest. Fairbanks Brothers, stock brokers, were engaged to look after the Purchase of the stock. The syndicate began the purchase at 85 and followed it along, fixing various figures for the blocks, until to-day the stock stands at $140 per share or better. Major Stephens said that they all four considered it the best industrial in Canada and they proposed to better the business upon a much larger scale than at present. Mr. D. L. McGibbon, in referring to the growth of the company within the past few years, stated that they had almost doubled their output in 36 months. And in that interval nearly $500,000 worth of profits had gone into betterments, such as new machinery and generally improved plant. The present output of the works is over $3,000,000 worth of goods per year, and the hands employed number 2000. Last year the company paid a 5 per cent. dividend and previous to that 8 per cent. The difference is accounted for by the fact that a large sum was put into betterment. Some years back the Canadian Co. lost ground to a considerable extent, and there was a general shake up in the management. It was at this period that Mr. D. Lorne McGibbon took hold, and it was mainly through his energetic measures that the corporation began to take on new life. Within three years the company made wonderful headway and it is now looked upon as one of the sterling industrial corporations of Canada. Back in 1902 the stock sold as low as $50 a share, while last year it was quoted at from $45 to $50. Since that time there has been a steady and rapid increase in the price of the stock. The authorized capital is $2,000,000, of which $1,500,000 have been paid in.

RUBBER RECLAIMING PATENT LITIGATION.

A BILL of complaint was filed on November 30 in the United States circuit court for the eastern district of Pennsylvania at Philadelphia by the Philadelphia Rubber Works, and the U. S. Rubber Reclaiming Works, acting as joint complainants against the S. & L. Rubber Co., of Chester, Pa., for alleged infringement of United States patent No. 454,442, which covers a process of washing reclaimed rubber, as well as the product itself. The complainants seek an injuction restraining the defendant from alleged further infringement of the patent in question and an accounting to determine the extent of the damages they claim to have suffered. The complainants declare that other actions may be instituted in maintenance of the exclusive rights claimed under the patent.

CINCINNATI RUBBER MANUFACTURING CO.

CONSIDERING the happy auspices under which the Cincinnati Rubber Manufacturing Co. began, it would seem to be as much goodness of heart as business prudence which prompted their recent house warming, on December 9. The company's plant is on the Baltimore and Ohio railroad, in Norwood, a suburb of the Queen City, and both Norwood and the "B. & O." helped to entertain the 300 representative business men and citizens at the plant, where the visitors were shown all the processes of turning the crude rubber into finished goods. After the tour of the plant, lunch was served in the packing room, and speeches were made by President Crawford, of the company, Mr. Tomlinson, of the B. & O., Mayor Mills, of Norwood, and others. The B. & O. conveyed the guests to and from the plant in a special train. The Cincinnati Rubber Manufacturing Co. were incorporated on April 8, 1905, and their plant was set up in less than three months. They expect to reach their full capacity soon, when they will be able to do about $1,000,000 worth of business a year. The company are to be praised for their courtesy, and for their efforts to popularize their industry, in a community where there is little general information regarding it.

GEORGE BORGFELDT & CO.—TWENTY-FIFTH ANNIVERSARY.

MESSRS. GEORGE BORGFELDT & CO. (New York), in connection with the holiday season, have presented their compliments to their friends in the trade, accompanied by a handsome souvenir in the shape of a book counting the history of the development of this important importing house, which has just now completed its twenty-fifth year. It is profusely illustrated with exterior and interior views of their great establishment in New York, and numerous branches in other cities, and portraits of

their official and clerical staffs, includin a portrait of the late Mr. Borgfeldt, which appears as a frontispiece. One of the interior views is devoted to their rubber goods department, in connection with which is the American agency for the Hannoversche Gummi-Kamm Co., A.-G. On the same page is a portrait of Mr. Julius Lehman, who received his first business training with the Hanover company, and for 21 years has been their representative with the Messrs. Borgfeldt.

BOSTON BELTING CO'S. ANNUAL.

AT the annual meeting of shareholders of the Boston Belting Co., on November 28, President James Bennett Forsyth stated that while the business of the company had been good during the year, a better showing might have been made but for the unprecedented cost of rubber and the other raw materials used. In response to questions asked at the meeting, President Forsyth explained the maintenance of a surplus practically as large as the capital stock by saying that the management had in view the erection of a more modern plant in order that the company might be better prepared to meet the new conditions of competition. This was in answer to the suggestion that extra dividends from time to time would be warranted by the condition of the company as shown by the balance sheet. The board of directors was reëlected, with the exception that George H. Forsyth was succeeded by William H. Furber, who a number of years ago was connected with the company in the days when the late John G. Tappan was treasurer. The financial condition of the company is set forth in the following details, the business year ending on Septemter 30:

ASSETS.

	1903.	1904.	1905.
Real estate	$ 100,000	$ 100,000	$ 100,000
Machinery	50,000	50,000	50,000
Material on hand	861,371	736,119	955,847
Cash and debts receivable	959,056	1,144,269	980,545
Trade marks	100	100	100
Miscellaneous	550	550	550
Total	$1,971,077	$2,031,038	$2,087,042

LIABILITIES.

Capital stock	$1,000,000	$1,000,000	$1,000,000
Surplus	800,000	800,000	800,000
Profit and loss	171.077	231,033	287,042
Total	$1,971,077	$2,031,038	$2,087,042

PROFIT AND LOSS.

Balance from previous year		$231,038
Interest on bonds and bank deposit		32,498
Profits		79,662
Miscellaneous receipts		2,570
Total		$345.768
Dividends	$ 80,000	
Bad debts	4,725	
Credit balance	261,042	$345.768

TRADE NEWS NOTES.

A REPORT is current that the management of the United States Rubber Co. have under consideration a large new bond issue, designed first as a measure for consolidating and refunding the existing issues, and secondly, to provide funds for new undertakings. Interest is added to this report by the fact that at the special shareholders' meeting called for January 3, as reported on another page, a vote will be taken on amending the by-law relating to the issue of bonds.

=The Derby Rubber Co. (Derby, Connecticut) have filed in the office of the secretary of state of Connecticut a certificate of increase of their capital stock from $50,000 to $200,000. Mr. William F. Askam, who lately became general manager, has removed his residence from Milford Point, Conn., to Shelton, in order to be nearer the reclaiming works.

=The rubber shoe department of The B. F. Goodrich Co. (Akron, Ohio) is now running in excellent shape, making a ticket of 1700 pairs of the "Straight Line" goods, a detailed description of which will appear in a later issue of this Journal.

=Chicago Fire Hose Co. (No. 54 La Salle street, Chicago) have become sole distributors, in the territory which they regularly cover, of the fire hose products of The B. F. Goodrich Co. (Akron, Ohio)

=Mr. John P. Lyons, advertising manager of the United States Rubber Co., is spending at Redlands, California. a more extended vacation than he has before enjoyed during the 12 years of his occupancy of this office. During the absence of Mr. Lyons his place will be filled by Mr. Robert E. Chumasero.

=As is usual at the beginning of the year, several changes have been made in the location of the selling staff of the United States Rubber Co. Mr. Arthur Reeve comes from the Boston office of the United States Rubber Co. to the New York office. Mr. Henry G. Armstrong who has been traveling for sometime past will have charge of stock in New York at No. 90 Thomas street. Mr. P. A. Manley comes from the Lycoming Rubber Co., (Williamsport, Pennsylvania) to the New York office. Mr. A. F. Solbery, selling agent of the Boston Rubber Shoe Co., goes from Boston to Chicago. Mr. E. L. Phipps, who represented the company for several years in New York, returns to the Boston office, No 101 Milk street.

=The Hard Rubber Co. of America, the incorporation of which was reported in THE INDIA RUBBER WORLD, August 1, 1905 (page 388), will apply on January 8 to the New York supreme court for an order authorizing the said corporation to change its name to the American Hard Rubber Co. As already reported in these pages, there is involved a reorganization of the present American Hard Rubber Co. (New York), with a largely increased capital.

—John C. Byxbee, of Meriden, Connecticut, has been elected president of the Canfield Rubber Co. (Bridgeport, Conn.), the Hon. Ratcliffe Hicks having resigned that position.

=The Marion Insulated Wire and Rubber Co. (Marion, Indiana) are understood to be planning to increase their capacity largely in the near future. For some weeks past the factory has been working overtime.

=The two factories of the Woonstocket Rubber Co. were closed on Saturday evening, December 23, to reopen on January 2.

=Mr. D. A. Cutler, formerly chemist for the Manhattan Rubber Manufacturing Co., has accepted a position with the Continental-Mexican Rubber Co. (New York) and, in addition to expert chemical work in connection with their product, will devote himself to the marketing of it.

=Mr. William J. Gorham, president of the Gorham Rubber Co. (San Francisco), made a recent business visit to New York and Boston, returning home in time for the holidays.

=Improvements and additions continue to be made at the works of the National India Rubber Co. (Bristol, Rhode Island). Plans have been adopted for a new fireproof storehouse, brick, 300 × 50 feet, part 3 stories and part 4. The company have decided to make their own paper boxes, of which a great number are needed for the packing of various products of the mill. The box manufacture will begin with the production of 10,000 per day.

=Harvey W. Leech, a retail dealer in rubber goods, No. 18 East Swan street, Buffalo, New York, filed a petition in voluntary bankruptcy in the United States district court on November 20; liabilities, $9738.36; assets, $2710. Herbert A. Hickman, an attorney, was chosen trustee, at a meeting of the creditors.

=As an indication of the gradual decline in the wearing of rubber boots, it may be mentioned that recently a number of employés of the Millville factory of the Woonsocket Rubber Co.—a mill devoted hitherto to making boots exclusively—were set to work making shoes.

=The board of the Dunlop Tire and Rubber Goods Co. (Toronto, Ontario), we omitted to mention in our notice of the company last month, consists of Warren Y. Soper (Ottawa), president; E. B. Ryckman, vice president; John Westren, secretary, treasurer and manager; Hon. George A. Cox and A. T. Kirkpatrick.

=Fisk Limited (Montreal, Quebec), manufacturers of leather and shoe goods, have a cement factory at Lachine, Quebec, regarding which they inform THE INDIA RUBBER WORLD: "We are buying quite a little crude India-rubber and doing a nice little business in rubber cement. We hope in a short time to add to our plant and make another line of goods."

=Mr. E. C. Clark, who has established himself in rubber mill engineering in St. Louis, making a specialty of rubber reclaiming plants, has become very busy in this field, having executed during the last two years several commissions in the United States and abroad. He is at present getting out plans for a small acid reclaiming plant to be installed by a mechanical rubber goods factory in Japan. This is the first reclaiming plant to be installed in that country.

=The United States Rubber Co. have notified their customers that after January 1 all orders should be addressed to the general offices in New York.

=The Fisk Rubber Co. (Chicopee Falls, Massachusetts) have filed with the Interstate Commerce Commission a complaint against railways operating west of Chicago, alleging unreasonable and discriminating rates on rubber tires. While the Fisk Rubber Co. alone are named in the complaint, it is understood that the other rubber tire manufacturers are interested and in sympathy with the movement.

=As reported in our issue of July 1, 1905 (page 352), the decision in the action of the Haskell Golf Ball Co. *v.* Hutchinson, Maine & Co., for alleged infringement of patent, in the London chancery court, was appealed from by the plaintiff. The case is on the calendar of the current term, to be heard as soon as the prior cases can be disposed of, and at last reports was expected to be reached either just before or just after the Christmas holidays.

=Textile Machine Works (Reading, Pennsylvania), manufacturers of braiding and knitting machinery, have recently added to their list several new machines. For the rubber hose manufacture they are building a line of high grade braiders which can be used for making hose in lengths up to 500 feet; also a line of braiders with horizontal pull out which can be used in tandem for applying two or three braided coverings in one operation.

=C. J. Bailey & Co. (Boston, Mass.) have been so busy filling orders for "Won't Slip" tires that they neglected to advise THE INDIA RUBBER WORLD of a reduction in the price list of their specialties listed in their regular advertisement. A card covering the list will be mailed to those interested.

=Grieb Rubber Co. Inc. (Trenton, New Jersey), in addition to their long established line of soles, heels, and sheet soling, are building up an excellent business in molded specialties for mechanical and other uses, the quality of which is equal to the Grieb products which have been several years longer in the market.

=The regular annual meeting and dinner of the Hood Rubber Jobbers' Western Association occurred in Chicago on December 28, being well attended.

=The H. O. Canfield Co. (Bridgeport, Connecticut) will move early in January into a new plant on Housatonic avenue, in which they are installing a new Rollins-Corliss engine and new machinery made by the Birmingham Iron Foundry, all of the latest and best designs. They will have a thoroughly modern mill room and over twice the floor space occupied hitherto, giving them increased facilities and an opportunity to do more business. The new plant was to be ready for occupancy by January 1, and the removal will be made as speedily as possible.

=Schwab & Co., large dealers in waste rubber scrap and other waste materials, in Philadelphia, have removed to larger premises at Nos. 418–420 South Front street, where they will have more space than was available in their former location, in Webstet street.

=The Garlock Packing Co. (Elmira, New York) have established a factory in Hamburg, Germany, to supply Continental wants for their special packings.

=The Goodyear Tire and Rubber Co. (Akron, Ohio) would appear to have a knowledge of Holy Writ, for a late booklet of theirs has, as a subhead, "For the Edification of the Man whose Name is Thomas."

=At the third annual Electrical Show, held recently in Madison Square Garden, New York, the Clifton Manufacturing Co. (Jamaica Plain, Mass.) had an excellent exhibit covering tire ape, conduit, and kindred goods.

=The coupon due January 1, upon the ten year 4½ per cent. good debentures of the General Rubber Co. is payable upon presentation at the office of the First National Bank, New York.

=The Alling Rubber Co., who control retail rubber stores in a number of Connecticut towns, are opening an additional store at Pittsfield, Massachusetts.

=The footwear departments of the rubber factories at Naugatuck, Connecticut, were closd on December 23, to reopen on January 2. The other departments of the Goodyear's India-Rubber Glove Manufacturing Co. were closed only on Christmas and New Year's. The "Old Shop," on Rubber avenue, was closed on December 23, indefinitely.

=The National India Rubber Co. will, it is understood, be large shippers, by the new Enterprise line of steamers plying between Bristol (Rhode Island) and New York. The rubber company make daily shipments of their goods to New York, including lots for the South and West, besides constantly receiving raw materials from New York, and the sailing schedule of the new line, it is reported, affords superior conveniences for all the purposes referred to.

=A fire occurred on December 1 in the store of The Fisk Rubber Co., No. 318 Euclid avenue, Cleveland, Ohio, damaging the building to the extent of $1000 and the stock of automobile tires to about $3000.

=The Salem Rubber Cement and Shoe Findings Co. (Salem, Massachusetts) are building new premises which will render possible an important increase in their capacity. The business was established in 1892 and incorporated in 1899 under the laws of Maine. The company's trade extends throughout the United States and Canada, besides which they are exporters to an important extent.

=The Interborough Vehicle Rubber Supply Co. (No. 423 East Seventy-sixth street, New York), on December 11, through two of the directors, La Mott Hartshorn and Joseph Backora, applied to the New York supreme court for the voluntary dissolution of the corporation, formed under the state laws July 1, 1905, with capital stated at $10,000. Judge Stover has set down the order to show cause for March 16. La Mott Hartshorn was appointed temporary receiver.

=W. P. Cowell, who has for nearly 18 years been traveling salesman for different houses through Ohio and Pennsylvania, has gone into the rubber jobbing business and will be known as the Pittsburgh Rubber Supply Co., locating at Nos. 723-725 Liberty street, Pittsburgh, Pennsylvania.

=The Merchants Rubber Co., Limited (Berlin, Ontario) have applied to the Dominion government for supplementary letters patent for the increase of their capital stock from $100,000 to $250,000.

=The St. John Rubber Tire Co. Inc. (No. 116 Broad street, New York), are to exhibit their cushion tires at the automobile show at the Sixty-ninth Regiment armory, in New York, this month, a special feature being a White steamer equipped with their tires which has just returned from several months' touring in the States.

=Work was resumed early in December by the Suffolk Rubber Co. (Setauket, Long Island), after a shutdown of several weeks, reported to have been due to a disagreement within the management. This is stated to have ended in the purchase of the interest of Franz Cutler, who had been secretary and treasurer, by the Joseph W. Elberson contingent in the company.

=The list of supplies for which bids were opened on December 2 by the New York department of correction—which has the administration of the city prisons and workhouse—included 100 pairs of rubber boots and 50 rubber coats.

=The firm of King & Leatherow has been formed at Newark, New Jersey, to manufacture advertising balloons and other rubber novelties. It is composed of Horace H. King, until now a member of King & Howe, Limited, balloon manufacturers, and Walter Leatherow, who has been factory superintendent of the Rubber Balloon Co. of America.

=Angie W. Pierce, for many years in the employ of the National India Rubber Co. (Bristol, Rhode Island), and since 1897 superintendent of the druggists' sundries department, resigned recently, being succeeded by H. A. Duval, who hitherto has been assistant superintendent of the Tyer Rubber Co. (Andover, Massachusetts). On the evening of December 14 Mr. Pierce was pleasantly surprised at his home by a party of employés of the druggists' sundries department at the National factory, who presented him with a handsome library chair, after which a few hours were pleasantly devoted to an impromptu concert, Mr. Angie and a number of his friends being particularly devoted to music.

=Negotiations have been completed for the removal of the factory of the Amazon Rubber Co. from Jamestown, New York, to Bradford, Pennsylvania, conditioned upon the sale of $150,000 in 6 per cent. bonds, covered by a mortgage on the proposed new plant, which bonds are expected to be taken in Bradford.

=Suit has been filed in the New York supreme court by Charles Blake Cisco, as assignee of a claim from the New York-Broadway Rubber Tire Co. (a selling concern), against the Goodyear Tire and Rubber Co. (Akron, Ohio), to recover $150,000, in respect of an alleged breach of contract. It is claimed that under a contract dated November 4, 1903, the defendant company agreed to deliver to the complainant as many tires as might be called for within a given period, at the prices then prevailing. Later, it is asserted, the Goodyear Tire company refused to longer deliver tires at the contract prices, by reason of which the plaintiff claims to have been deprived of a large amount of profitable business. It is understood that the Goodyear company claim that the contract expired at an earlier date than alleged on the other side; that no violation of the contract occurred; and that a balance of $10,000 is due from the New York-Broadway Rubber Tire Co., to recover which amount a counter suit has been filed.

THE COMING AUTOMOBILE SHOWS.

WHEN the sixth annual show of the Automobile Club of America is opened in New York on Saturday evening, January 13, the public will have its first view of the magnificent new armory of the Sixty-ninth Regiment, the most convenient entrance of which will be on Twenty-sixth street near Fourth avenue, with other entrances on Lexington avenue and Twenty-fifth street. The cost of this big structure is placed at $1,500,000, and the spacious exhibition hall possesses what is probably the largest brick arch of the world. With everything new and thoroughly up to date, this huge building will supply a spacious home for perhaps the most comprehensive exposition of the automobile industry ever held in this country. Gasoline, steam, and electric vehicles, both for pleasure and business purposes, will be attractively distributed, with space left for all sorts of accessories and sundries; in fact, everything connected with the industry will be given a place in the extensive show.

The sixth National Automobile Show, at Madison Square Garden, New York, will begin on Saturday evening, January 13, and continue through all of the following week. The show this season will be under the auspices of the Association of Licensed Automobile Manufacturers. As usual, all the spaces will be filled, and the show may be expected to be of great interest, not only in respect of automobiles in general but also of the rubber tire production——This show is to be followed, as usual, by an exhibition, under the same auspices, in Chicago, in the week from February 3 to 10.

PERSONAL MENTION.

COLONEL THEODORE A. DODGE, whose interests in the rubber business have been very large, and whose circle of friends and acquaintances is extensive, is permanently settled in Paris, where he is devoting his time to the completion of a second volume of his history of Napoleon. The Colonel is hale and hearty, although not quite as active as formerly, and whenever he meets one who knows anything about the rubber trade in America sends greetings to his friends across the sea.

=Mr. Eliot M. Henderson, vice president of the Manhattan Rubber Manufacturing Co. (New York), on his recent trip from Southampton to Cape Town, had a rough weather experience that does not come to every traveler. The weather was such that not only were the dead lights that cover the ports smashed to the number of 8 or 10, but boats were broken and carried away, deck houses wrecked, and the iron bulwarks on the port side for many feet crushed flat to the deck. The vessel, however, reached harbor without accident to any passenger.

=A late report gives particulars of the death of Mr. Page. [See page 106.] It seems that he was a passenger on the *Bufco*, coming down the river from the Bolivian port of Villa Bella. About October 7 he was taken sick with bilious fever and on the 13th passed away, at 4 o'clock in the afternoon. The remains were taken ashore at the barraca Nichteroy, which is in the state of Amazonas and on the left bank of the Madeira river, and on the following day it was interred in a place called the Bibosi. His effects were turned over to Parlo Fehre, manager of the house of R. Suarez & Co. (Pará). As soon as possible the American consul at Pará, Mr. Louis A. Aymé, was notified, and he in turn notified his friends and relatives in the United States, as well as the assistant secretary of state at Washington.

A NEW steamer on the Amazon, intended for the Acre river traffic, is called the *Seringueiro*, which is the Brazilian word for rubber cutter. It was built at Glasgow and has a registered tonnage of 103½.

THE RUBBER TRADE IN AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Not for many years has there been such a general increase in the manufacturing capacity of the rubber plants of Akron as during the year just closed. Scarcely a company but reports additions to its factory, and increased capacity and improved machinery. The remarkable demand for automobiles and the fact that Akron is so important a tire manufacturing center is one explanation of the constant increase in business here. Another is the great diversity of uses to which rubber is now being put. This is really the dull season of the year, or rather is preliminary to it, on account of the inventories that usually are taken in January; yet manufacturers are extremely busy.

The principal increase in factory space in any one plant in Akron was to the plant of The B. F. Goodrich Co., on account of the addition of a new department, for the manufacture of rubber boots and shoes. This is a large 3½ story brick building, and is already filled with machinery and a working force for the first year's output. The company have also made other additions to the working capacity. The capital stock of the company was increased lately from $5,000,000 to $10,000,000.

The Diamond Rubber Co. have grown steadily in business and capacity, having built a large addition to the office, which was finished and occupied in February; a two story addition 40 × 60 feet to the laboratory; a 50 × 90 washing room at the South Akron plant; a two story addition 20 × 16 as a receiving room; an additional one story 120 × 60 on a former one story building for general packing purposes. Besides, a large new additional engine has been put in, which increases the engine capacity to over 2000 HP. The company have also increased their capital stock from $1,750,000 to $3,500,000.

One of the newer companies which shows a large increase in business is the Firestone Tire and Rubber Co. This company has increased its general facilities 200 per cent. and its milling capacity 150 per cent. The floor space has been trebled during the year. The company at a special meeting of the general stockholders on December 2 authorized an increase in capital from $200,000 to $500,000, and on the same day the directors took the necessary steps to carry out the instructions. The increase has been authorized by the state of West Virginia, under whose laws the company is capitalized. The company has added the past year a three story building with basement to care for the increase in the regular business and for the manufacture of the new mechanically fastened pneumatic tire which the company is beginning to advertise. It also added a one story addition 50 × 100 feet to provide for needed warehouse room and for more milling capacity. New machinery, an 800 HP. engine for which an engine house was built, an electric light plant, air compressors and other machinery have been installed.

The new Swinehart Clincher Tire and Rubber Co. is adding an entirely new department by erecting a large one story building 20 × 170 feet for a reclaiming plant. The company has purchased two acres of land from the American Cereal Co. at the rear of the Swinehart plant, and within a month expects to be able to occupy the addition. The walls will be temporary until next spring, when concrete walls can be built, and the roof will be permanent. Rubber will be reclaimed under a secret process worked out by J. A. Swinehart under which he claims to be able to bring waste rubber nearer to the original state than by any other method. The company has orders for its output from local manufacturers. The demand for the solid rubber tires of the company is the chief reason for the plant being trebled in its capacity, which it will be in a few weeks. The solid tire department will be doubled in capacity. The company will devote considerable effort to a pneumatic tire, however.

The Goodyear Tire and Rubber Co. added an engine room 90×40 feet, a power room 110×48 feet and a dry room 160×34 feet. The equipment has been increased by a 2000 HP. engine and miscellaneous machinery, so that the power capacity has been trebled. Automobile tires continue to be the main output, with the company's pneumatic golf ball being one of its best advertised new products.

The Buckeye Rubber Co. added during the year a single story vulcanizing room 42 × 70 feet, and put in equipment to match.

The Stein Double Cushion Tire Co. in East Akron is larger at present by an additional vulcanizing room 60 × 40 feet, and a new machine shop. The factory has doubled the capacity that it had a year ago, and instead of being constantly behind in its orders, the company is constantly up with its work.

No new buildings were added to the big local plant of the American Hard Rubber Co., but the departments were all shifted about, and new machinery replaced the old. Three new boilers were put in to replace the old.

The Miller Rubber Manufacturing Co. has added new equipment but no buildings. Like all the other plants it has been busy constantly.

The only change in Barberton, a suburb, was the practical consolidation of the Alden Rubber Co. and the Pure Gum Specialty Co., and the erection of a new plant of the Aladdin Rubber Co., organized some months ago. This building is 120 × 60 feet, and is completed. The machinery is being installed, and the company expects to be reclaiming rubber early in February. Boilers, engines and mill are being set up as rapidly as possible.

The Faultless Rubber Co. has made additions to its plant here as well as in Ashland. At the latter place the capacity of the plant was increased by a two story structure 50 × 100 feet. The addition to the Akron plant is four stories high, 45 × 25 feet. Both additions are for purely manufacturing purposes.

The Motz Tire and Rubber Co. recently has established a headquarters in a large manufacturing plant for assembling purposes.

The M. & M. Manufacturing Co. is commencing a more active campaign than any yet carried on in the interest of its rubber cement and acid solution, a preparation coming into considerable opularity, especially for tire users. The company has been in business on a partnership basis for two years, but recently was incorporated, and is making preparations for an extensive business. The company has a plant on Carroll street 35 × 200 feet long. F. C. Milhoff is the head and active manager of the plant and company. Electric power, a new mixer and equipment and additions costing about $8000 have recently been added. The company manufactures the "M. & M. Cement and Acid Cure Solution," a combination of cements and acid cure solutions that it claims will produce the necessary chemical action and give better results than a steam vulcanizer and do it in from 3 to 5 minutes.

Mr. A. H. Marks is expected home from England about January 1. He has been in Liverpool where he went to attend the annual meeting of the Northwestern Rubber Co., of which he is president, and arrange the business of the company for another year.

Charles B. Stacey, who resigned recently his position with The B. F. Goodrich Co., with which he had been connected for 14 years, being latterly manager of the mechanical department, and removed to Atlantic City, New Jersey, where he has purchased a residence.

THE RUBBER FROM THE "CYRIL."

ALL the rubber salved from the cargo of the steamer *Cyril*, which went down in the Amazon on September 6, has found its way to Liverpool, where it was disposed of at auction on December 13 and 20, at very good prices. The first sale embraced about 689 cases, described as follows: "Without guarantee the fine and entrefine contains 3 per cent., the negro-heads 25 per cent., and the ball [Peruvian] 15 per cent. more rubber than usual. The rubber shows no signs of change, nor does it appear to have become sandy." Ten case Manáos fine, "new large biscuits, hard brown cure," brought 5*s*. 3¼*d*. [=$1.29¼] per pound, and other grades in proportion. The 180 cases sold December 20 were described as containing about 5 per cent. more water than the first offerings, and a few lots about 1 per cent. sand.

Thus is closed a most interesting incident in the rubber trade. Not only was a large quantity of rubber rescued from a sunken ship, but every piece of it was identified, so that it was possible for the auctioneer to catalogue 102 lots, in this style:

Lot.	Marks.	Cases.	Rubber.	Description.
I.	AHA F	62	Pará fine.	New very wet hard brown and white cure, few slightly touched with E'fine, few Rio Negro. (Fair)

[Sold at 5*s*. 3*d*.]

—and ultimately the record contained also the price paid for each lot. The first item in the catalogue, as do a number of others, relates to rubber consigned from Manáos by Adelbert H. Alden.

PARKER, STEARNS & CO. (New York city), December 8, 1905, under New York laws; capital $450,000. This succeeds the corporation of Parker, Stearns & Sutton, formed in 1892, and composed of Messrs. Russell Parker, James H. Stearns, and B. Franklin Sutton, manufacturers of druggists' sundries. Messrs. Parker and Stearns became associated in business in 1879, Mr. Sutton joining them in 1885. Mr. Sutton is now retiring from bnsiness altogether. The president of the new corporation is Mr. Parker; the vice president is Mr. Stearns; and the secretary is Mr. Henry C. Burton, who for a number of years has been the company's manager. Mr. W. H. Harding, Jr., of New York, is also a director.

THE rubber importing firm of Poel & Arnold (New York) expired by limitation on December 31, and on January 2 is succeeded by Poel & Arnold, under new articles of copartnership, the members being Frank Poel, C. H. Arnold, and A. Fleischmann..

REVIEW OF THE CRUDE RUBBER MARKET.

PRICES are higher again at this date than one month ago, and the comparative table of quotations for Pará grades which appears on this page shows them to be considerably higher than one year ago. There have been fluctuations meanwhile, of course, but the net result of the twelve-month is a higher price level, despite a larger production in the Amazon region. The firmness of tone in the New York market apparently is not due to any pressure on the part of buyers on this side of the Atlantic. Of late European buying has been more active, and both in New York and Europe the tendency of prices is attributed to conditions in the primary markets, where, in spite of larger receipts than usual, holders show a firm disposition.

Receipts at Pará (including Caucho) since the beginning of the crop season have been as follows:

	1902.	1903.	1904.	1905.
July ..... *tons*	1290	1280	1250	1450
August	1370	1230	1260	1300
September	1670	2010	1780	2200
October	2280	2440	2820	3580
November	2650	2980	2800	2890
December	2990	3530	3390	*a*2775
Total	12,250	13,470	13,300	14,235

[*a*—To December 28.]

At the Antwerp sales on December 15, of 339 tons offered, 325 were sold at an average advance of 35 centimes, equal to about 3 per cent. over the brokers' estimations, based upon results of the November sale. The next sale will occur January 24. Messrs. C. Schmid & Co., Successeurs, report results attained at the last sale, for important lots:

Kilos.	Description.	Valuation.	Sold at.
1,156	Ceylon Biscuits	16.00	16.50
25,609	Congo Sangha	10.40	10.80—10.85
16,959	Congo Kasai red	11.10	11.22½
16,542	Congo Djuma	7.75	8.35
3,835	Congo Lobay	12.25	12.65
22,150	Upper Congo—Batouri	10.50	10.80—10.85
10,240	Upper Congo—Aruwimi	10.10	10.80
13,587	Upper Congo—Aruwimi small red spindles	10.75	11.02½
14,260	Upper Congo—Lake Leopold II	11.25	12.15—12.27½
14,218	Upper Congo—Mongalla	10.60	10.70
19,708	Upper Congo—Maringa	5.25	5.32½—5.52½
2,640	Angola thimbles	11.25	11.50
5,843	Upper Congo—Equateur	12.30	12.72½

Following is a statement of prices of Pará grades, one year ago, one month ago, and on December 30—the current date:

PARA.	January 1, '05.	December 1, '05.	December 30.
Islands, fine, new	114@115	119@120	124@125
Islands, fine, old	none here	none here	none here
Upriver, fine, new	119@120	122½@123½	129@130
Upriver, fine, old	none here	none here	none here
Islands, coarse, new	65@ 66	71@ 72	75@ 76
Islands, coarse, old	none here	none here	none here
Upriver, coarse, new	93@ 94	90@ 91	96@ 97
Upriver, coarse, old	none here	none here	none here
Caucho (Peruvian) sheet	69@ 70	73@ 74	74@ 75
Caucho (Peruvian) ball	79@ 80	88@ 89	91@ 92
AFRICAN.			
Sierra Leone, 1st quality	103@104		
Massai, red	103@104		
Benguella	84@ 85		
Cameroon ball	71@ 72		
Accra flake	26@ 27		
Lopori ball, prime	112@113		
Lopori strip, prime	94@ 95		
Madagascar, pinky	92@ 93		
Ikelemba	113@114		
CENTRALS.			
Esmeralda, sausage	88 @89		
Guayaquil, strip	75 @76		
Nicaragua, scrap	84 @85		
Panama, slab	66 @67		
Mexican, scrap	87 @88		
Mexican, slab	65 @66		
Mangabeira, sheet	60 @70		
EAST INDIAN.			
Assam	97 @98		
Borneo	45 @49		

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	5$500	Upriver, fine	6$500
Islands, coarse	2$500	Upriver, coarse	4$400

Exchange, 16 1/16*d*.

Last Manáos advices:

Upriver, fine	6$500	Upriver, coarse	4$000

Exchange, 16 1/16*d*.

NEW YORK RUBBER PRICES FOR NOVEMBER (NEW RUBBER).

	1905.	1904.	1903.
Upriver, fine	1.21@1.24	1.16@1.31	92@1.02
Upriver, coarse	89@ 91	89@ 98	78@ 83
Islands, fine	1.18@1.21	1.12@1.26	90@ 98
Islands, coarse	68@ 72	62@ 73	54@ 58
Cametá	69@ 72	63@ 72	53@ 58

In regard to the financial situation, Albert B. Beers (bicke in India rubber, No. 68 William street, New York) advises us as follows:

"During December the demand for paper has been light and irregular, city banks taking but little, and the small buying by out-of-town ones has been at rates running from 5¼ @ 7 per cent. for the various rubber names."

Tires at the Olympia Motor Show.

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total 1905.	Total 1904.	Total 1903.
Stocks, October 31....*tons*	196	31 =	227	9	82
Arrivals, November.....	799	482 =	1281	1285	1166
Aggregating.....	995	513 =	1508	1294	1248
Deliveries, November.....	841	513 =	1354	1287	1216
Stocks, November 30.	154	0 =	154	7	32

	PARÁ.			ENGLAND.		
	1905.	1904.	1903.	1905.	1904.	1903.
Stocks, Oct. 31....*tons*	155	165	345	310	111	435
Arrivals, November...	2725	2720	2890	1270	994	1035
Aggregating.....	2880	2885	3235	1580	1105	1470
Deliveries, November.	2485	2345	3040	1075	925	1100
Stocks, Nov. 30...	395	540	195	505	180	370

	1905	1904.	1903.
World's visible supply, November 30.. *tons*	2334	2067	2648
Pará receipts, July 1 to November 30.....	10610	9331	9290
Pará receipts of Caucho, same dates.....	770	599	594
Afloat from Pará to United States, Nov. 30..	443	520	1017
Afloat from Pará to Europe, November 30....	837	820	1034

United States Crude Rubber Imports.

[TEN MONTHS—JANUARY-OCTOBER—FOR THREE YEARS.]

FROM—	1903.	1904.	1905.
United Kingdom.....*pounds*	7,980,826	6,136,479	7,841,737
Germany.....	1,877,140	2,089,912	3,716,890
Other Europe.....	7,599,305	9,163,577	7,800,784
Central America.....	913,681	1,151,608	1,142,248
Mexico.....	235,262	305,647	496,719
West Indies and Bermuda.....	14,475	12,886	5,522
Brazil.....	26,084,588	28,282,456	29,058,906
Other South America.....	1,359,305	853,157	1,617,528
East Indies.....	425,437	439,829	2,753,766
Other Countries.....	6,201	12,270	45,917
Total.....*pounds*	46,494,340	49,951,326	54,480,017
Value.....	$28,968,164	$34,315,180	$40,124,377

Rubber Receipts at Manaos.

DURING November and five months of the crop season for three years [courtesy of Messrs. Scholz & Co.]:

FROM—	NOVEMBER. 1905.	1904.	1903.	JULY-NOVEMBER. 1905.	1904.	1903.
Rio Purús—Acre.....*tons*	414	497	512	2287	1694	1613
Rio Madeira.....	320	216	199	1258	1249	1208
Rio Juruá.....	361	260	468	978	665	882
Rio Javary—Iquitos.....	479	302	504	1486	1158	1070
Rio Solimões.....	148	144	123	478	258	306
Rio Negro.....	40	15	32	52	33	49
Total.....	1762	1434	1638	6530	5057	5128
Caucho.....	188	124	44	715	458	472
Total.....	1950	1558	1682	7254	5515	5600

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for carload lots, in cents per pound—show a decline in several items, as follows:

Old Rubber Boots and Shoes—Domestic.....	7½ @ 7¾
Do —Foreign.....	7¼ @ 7½
Pneumatic Bicycle Tires.....	6¼ @ 6½
Solid Rubber Wagon and Carriage Tires.....	8½ @ 8⅞
White Trimmed Rubber.....	10½ @11
Heavy Black Rubber.....	5¾ @ 6
Air Brake Hose.....	3¾ @ 3⅞
Fire and Large Hose.....	3 @ 3¼
Garden Hose.....	2⅜ @ 2½
Matting.....	1¼ @ 1½

Para.

KANTHACK & Co. report [December 11]:

With a growing feeling of confidence, a general and sustained demand has prevailed, and although supplies continue on quite a liberal scale, the power of absorption has been equally good. Prices have not only been steady throughout, but have lately experienced some improvement, a firm tone being noticeable at the close.

London.

EDWARD TILL & Co. report stocks [December 1]:

		1905.	1904.	1903.
LONDON	Pará sorts.....*tons*	—	—	—
	Borneo.....	49	30	20
	Assam and Rangoon.....	52	4	4
	Penang.....	357	—	—
	Other sorts.....	204	558	250
	Total.....	662	592	274
LIVERPOOL	Pará.....	504	178	374
	Caucho.....	96	94	28
	Other sorts.....	466	643	509
	Total, United Kingdom.....	1728	1507	1185
	Total, November 1.....	1372	1307	1185
	Total, October 1.....	1489	1666	866
	Total, September 1.....	1694	1508	1564
	Total, August 1.....	1728	1764	1781
	Total, July 1.....	1750	1920	5285

PRICES PAID DURING NOVEMBER.

	1905.	1904.	1903.
Pará fine, hard..	5/ 2½@5/ 3⅛	4/11½@5/ 5½	3/10 @4/ 2
Do soft.....	5/ 1½@5/ 2¼	4/11 @5/ 4¼	3/ 9 @4/
Negroheads, scrappy..	3/10¼@3/11	3/ 9½@3/11½	3/ 3 @3/ 4¾
Do Cametá.	2/11¼@3/ 2	2/ 9½@2/10½	2/ 3½@2/ 5½
Bolivian.....	5/ 2¾@5/ 3¾	None sold	4/ @4/ 2
Caucho, ball.....	3/ 9¼@3/10¼	3/ 5 @3/ 6½	3/ 3 @3/ 4¾
Do slab.....	3/ 1½@3/ 2	2/11½@3/ 1	2/ 6½@2/ 9
Do tails.....	No sales	2/ 8½@3/ 2½	2/10

Liverpool.

WILLIAM WRIGHT & Co. report [December 1]:

Fine Pará.—There has been more demand for spot rubber. Prices have only fluctuated slightly, closing quotation being 5*s.* 3*d.* for Up-river, and 5*s.* 2*d.* for Islands. For delivery there has been a strong demand, especially for January-February and February-March, which still continues, 5*s.* 2¾*d.* to 5*s.* 3*d.* being to-day's value. To our mind this presages the probability of a strong American demand during the heavy month's receipts. During next month it is possible prices may react slightly, but all present indications point to a strong demand and no material break in prices. A very large business could have been done in delivery for next year, but sellers declined to operate freely, which is not to be wondered at, when Manáos prices are 2½*d.* per pound over those ruling here, and a further cause of hesitation is due to the uncertainty of American action in the near future. Present rates, from a manufacturer's point of view, are, we think, fairly safe.

EDMUND SCHLÜTER & Co. report [November 30]:

Pard Rubber.—The early part of the month was under the influence

SPECIAL NOTICE.

Party wanted with capital to invest in well established rubber plant, to assume active part and fill position as treasurer. Splendid opportunity for the right party. Address CAPITAL, care of "The India Rubber World." (894]

FOR RENT.

FOUR Floors, 50 x 70 feet, in a nearly new brick factory building. Equipped with line shafting on each floor; Automatic Sprinklers throughout the building; Houser freight elevator; light, heat, and power furnished. For particulars write WILLIAM YERDON, Fort Plain, New York. [798]

of predicted large receipts during November and December, and although the actual receipts in November were only moderate, the market at the close is still—even in a lesser degree—under the same influence. Since we issued our last monthly report Manáos indications are unanimous in predicting smaller receipts during January-March, 1906, than during January-March, 1905. If this is borne out by the facts, and considering the large deliveries which have taken place (July-October, 1905, about 1300 tons more than July-October, 1904, and July-November, probably 1500 tons more) it may be safe to assume that supplies will not be too large and prices, temporary fluctuations excepted, not go lower. We give the reports of an expected mild winter in the United States and Canada, for what they are worth; if correct they may mean no advance in the value of rubber, which otherwise, and in the circumstances mentioned, would be probable rather than possible.

WORLD'S VISIBLE SUPPLY OF PARAS, NOVEMBER 30.

	1905.	1904.	1903.	1902.	1901.
Tons	2830	2224	2900	3167	3359
Prices, hard fine	5/3	5/5½	4/	3/4¼	3/7

LIVERPOOL STOCKS OF AFRICAN RUBBER, NOVEMBER 30.

1905.....307	1902 473	1899. 533	
1904.....443	1901.. 648	1898 460	
1903.....198	1900. 802	1897.....354	

Antwerp.

ANTWERP RUBBER STATISTICS FOR NOVEMBER.

DETAILS.	1905.	1904.	1903.	1902.	1901.
Stocks, Oct. 31 .*kilos*	554,483	710,860	876,637	350,138	266,105
Arrivals in Nov....	624,835	336.701	361,895	235,231	683,521
Congo sorts.....	462,907	267 778	303.453	201,172	660,897
Other sorts.....	161,478	68 923	58,442	34,059	22,624
Aggregating...	1,178.868	1,047,561	1,238,532	585,369	949,626
Sales in November..	543,572	435.835	558,390	399.408	106 325
Stocks, Nov. 30....	635,296	611.726	680,142	185 961	843,301
Arrivals since Jan. 1.	5.239,553	5,182,012	5.088,325	4,604,749	5,644,282
Congo sorts	4,006,203	4,263 232	4.580,451	4,232,804	5 234,931
Other sorts	1,233,350	918 780	507,869	371,945	409,351
Sales since Jan. 1 ..	5 145,618	5,181,186	5.066,288	4.833.497	5,414,930

RUBBER ARRIVALS AT ANTWERP.

NOVEMBER 20.—By the *Philippeville*, from the Congo:

Bunge & Co.....(Société Général Africaine) *kilos*	152 000	
Do .....(Chemins de fer Grand Lacs)	31,000	
Do .....(Cie. du Kasai)	16,000	
Do .....(Sultanats du Haut Ubangi)	70,000	
Charles Dethier.....(Belgika)	19.000	
Do .. ..(Société La "M'Poko")	1,000	
Edmond Van Steensel.....(Cie. Bruxelloise du Haut ..... Congo)	6,000	
M. S. Cols.. .....(Société Baniembe)	1,500	
Do .....(Mr. C. D'Heygere)	1,000	
Société Coloniale Anversoise.....	2,000	
Do .....(Belge du Haut Congo)	7,000	
Comptoir des Produits Coloniaux (Société N'Goko ..... Sangha)	2,000	
Do .....(Ekela Kadei Sangha)	2,500	
Société General de Commerce....Société La Lobay)	3,500	
Cie. Commerciale des Colonies (Cie. de l'N'Keme et ..... l'N'Keni)	4,000	
Do .....(La Haut Sangha)	4,500	
Société Equatoriale Congolaise...(Société l'Ikelemba)	3,000	
	1,500	327,500

DECEMBER 12.—By the *Anversville*, from the Congo:

Bunge & Co .....(Société Générale Africaine) *kilos*	327,000	
Do .....(Chemins de fer Grand Lacs)	35,000	
Do .....(ABIR)	11,500	
Comptoir Commercial Congolais	17,000	
Société Coloniale Anversoise (Cie. Française du Haut ..... Congo)	17,700	
Do .....(Belge du Haut Congo)	2,000	
Do .....(Süd Kamerun)	9,000	
Do .....(Cie. du Kasai)	1,000	
M. S. Cols .....(Société l' Ikelemba)	5,000	
Do ..... Mr. C. D'Heygere)	75,000	
L. & W. Van de Velde.....	1,500	
	500	
	15,000	511,200

Ceylon Exports (Plantation Rubber).

DETAILS—BY WEEKS.

	Pounds.		Pounds.
January 1 to Oct. 23	107,056	Week ending Nov. 20...	999
Week ending Oct. 30....	4,075	Total to Nov. 20	121,090
Week ending Nov. 6.....	1,943	Same period, 1904.....	62,641
Week ending Nov. 13....	7,017	Same period, 1903.....	38,215

DESTINATION.

Great Britain	87,767	Belgium	9,297
Germany	16,234	Australia	1,152
United States	6,594	Holland	125

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

December 5.—By the steamer *Basil*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	216,300	49,100	74.200	.....=	339,600
Poel & Arnold...	97,400	18,500	105.800	2,900=	224,600
A. T. Morse & Co	102,900	11,200	17 000	... .=	131,100
General Rubber Co.....	40,800	5,300	49,900	2,100=	98,100
Neale & Co.....	.....	.. ..	48,000	.....=	48,000
Hagemeyer & Brunn.....	9,900	2,400	18,900	.....=	31,200
L. Hagenaers & Co.....	19,000	.....	5,800	. ...=	24,800
Edmund Reeks & Co....	8,000	700	12,900	.....=	21,600
Total	494,300	87.200	332,500	5,000=	919,000

December 18.—By the steamer *Maranhense*, from Manáos and Pará:

New York Commercial Co.	186,500	27,600	74,600	2,700=	291,400
Poel & Arnold.....	87,900	27,400	91,300	1,800=	208,400
A. T. Morse & Co.... ..	70,800	20,800	46,000	11,600=	149,200
General Rubber Co	18,300	5,500	52,900	.....=	76,700
Edmund Reeks & Co	26,200	4,200	8,500	300=	39,200
Hagemeyer & Brunn... .	23.400	2,800	2,100	.....=	28,300
L. Hagenaers & Co.....	15,000	.....	4,200	.....=	19,200
Neale & Co.....	10.500	1,400	5.700	....=	17,600
Constantine P. San Tos..	7,200	300	600	....=	8,100
Neuss & Hesslein Co.....	1,600	300	900	700=	3,500
Total.. .....447.400		90,300	286,800	17,100=	841,600

December 26.—By the steamer *Hubert*, from Manáos and Pará:

A. T. Morse & Co.....	175,700	27,900	73,000	2,100=	278,700
Poel & Arnold.....	149,600	26,600	55,700	6,200=	238,100
New York Commercial Co.	146.600	30.500	35.300	1,800=	214,200
General Rubber Co.....	38,700	14,500	67,700	1,800=	122,700
Neale & Co.....	.....	.....	45.500	.. .=	45,500
L. Hagenaers & Co.....	24,300	. ...	4,300	.....=	28,600
C P. San Tos...	8,200	3.600	5.600	600=	18,000
Edmund Reeks & Co.....	10,000	1,100	6,200	.....=	17,300
Hagemeyer & Brunn	7 800	2,300	1,200	.....=	11,300
Total.....	560,900	106,500	291,500	12,500=	974.400

[NOTE.—The steamer *Amazonense* from Pará, is due at New York, January 4, with 650 tons Rubber.]

PARA RUBBER VIA EUROPE.

		POUNDS
DEC. 1.—By the *Cedric*=Liverpool:		
New York Commercial Co (Fine).....	18,000	
Poel & Arnold (Coarse).....	80,000	98,000
DEC. 18.—By the *Etruria*=Liverpool:		
New York Commercial Co. (Fine) ..		11,000
DEC. 21.—By the *Cevic*=Liverpool:		
Poel & Arnold (Coarse).....	33,000	
Poel & Arnold (Caucho).....	115,000	148,000
DEC. 26.—By the *Caronia*=Liverpool:		
New York Commercial Co. (Fine)....		28,000

OTHER ARRIVALS AT NEW YORK.

CENTRALS.

		POUNDS.
NOV. 24.—By the *Alene*=Caribbean:		
G. Amsinck & Co.....		2,500
NOV. 24.—By the *Alliança*=Colon:		
Hirzel, Feltman & Co.....	8,000	
Lawrence Johnson & Co.....	5.100	
G. Amsinck & Co.....	4.700	
A. Santos & Co	3 600	
Roldan & Van Sickle.....	2,400	
Dumarest Bros. & Co.....	2,000	
E. B. Strout.....	2 400	
J A. Medina & Co.....	1,700	

CENTRALS.—Continued.

Piza, Nephews & Co.....	2,100	
Charles E. Griffin.....	1,000	
Silva, Bussenius & Co.....	800	
Smithers, Nordenholt & Co.....	500	
Meyer Hecht..	500	
Harburger & Stack....	500	
Isaac Kubie & Co.	500	35,800
NOV. 25.—By the *Lucania*=Liverpool:		
George A. Alden & Co.....		45,000
NOV. 23.—By the *S guranca*=Mexico:		
E. Steiger & Co.....	1,000	
Harburger & Stack.....	1,000	

CENTRALS.—Continued.

Fred. Probst & Co	700	
Thebaud Brothers	500	3,200
NOV. 27.—By the *New York*=London:		
Poel & Arnold		22,500
NOV. 28.—By the *San Marcos*=Mobile:		
A. T. Morse & Co	2,800	
Eggers & Heinlein	1,500	
European Option	2,500	6,800
NOV. 28.—By the *Alleghany*=Colombia:		
John Boyd, Jr. & Co	2,000	
A. A. Lindo & Co	500	2,500
NOV. 28.—By the *Titian*=Bahia:		
Hirsch & Kaiser	11,200	
American Commercial Co	3,500	14,700
DEC. 1.—By the *Finance*=Colon:		
Hirzel, Feltman & Co	23,800	
Mann & Emdon	3,500	
G. Amsinck & Co	2,200	
J. A. Medina & Co	700	30,200
DEC. 1.—By the *Proteus*=New Orleans:		
A. T. Morse & Co	2,500	
Manhattan Rubber Mfg. Co	2,000	4,500
DEC. 2.—By the *El Alba*=Galveston:		
Continental Mexico Co		11,500
DEC. 4.—By the *Yucatan*=Mexico:		
E. Steiger & Co	1,500	
Harburger & Stack	700	
H. Marquardt & Co	700	
European Account	15,000	17,900
DEC. 6.—By the *Advance*=Colon:		
Lawrence Johnson & Co	4,400	
Roldan & Van Sickle	5,800	
G. Amsinck & Co	5,400	
Hirzel, Feltman & Co	5,000	
Mecke & Co	3,700	
J. A. Medina & Co	2,900	
Isaac Brandon & Bros	1,300	
American Trading Co	1,100	
E. B. Strout	1,400	
Dumarest Bros. & Co	1,100	
A. Santos & Co	1,000	
George A. Alden & Co	900	
Meyer Hecht	500	34,500
DEC. 8.—By the *Virginia*=Greytown:		
E. B. Strout	3,500	
W. R. Grace & Co	700	
Eggers & Heinlein	1,000	
Hirzel, Feltman & Co	800	
G. Amsinck & Co	500	6,500
DEC. 8.—By the *Excelsior*=New Orleans:		
A. T. Morse & Co	7,500	
A. N. Rotholz	2,500	
Eggers & Heinlein	2,000	
G. Amsinck & Co	1,500	13,500
DEC. 9.—By the *Trent*=Colombia:		
E. B. Strout	3,000	
A M. Capens Sons	3,500	
Czarnkow McDougal Co	500	7,000
DEC. 11.—By the *Esperanza*=Mexico:		
Graham, Hinkley & Co	1,500	
E. N. Tibbals Co	500	
E. Steiger & Co	500	2,500
DEC. 12.—By the *Altai*=Colombia:		
A. & T. Henry	2,500	
Kunhardt & Co	1,500	
Roldan & Van Sickle	1,500	
John Boyd, Jr. & Co	1,500	
American Trading Co	1,000	
G. Amsinck & Co	800	
Isaac Brandon & Bros	700	
A. D. Straus & Co	500	10,000
DEC. 13.—By the *Terence*=Bahia:		
Hirsch & Kaiser	11,000	
American Commercial Co	3,500	14,500
DEC. 13.—By the *Mexico*=Colon:		
Hirzel, Feltman & Co	19,700	
Andean Trading Co	1,700	21,400
DEC. 13.—By the *El Dia*=Galveston:		
New York Commercial Co		22,500
DEC. 16.—By the *St. Paul*=London:		
Poel & Arnold	8,000	
General Rubber Co	3,000	11,000
DEC. 16.—By the *Minnetonka*=London:		
General Rubber Co	15,000	
George A. Alden & Co	13,000	28,000
DEC. 18.—By the *Vigilancia*=Mexico:		
H. Marquardt & Co	2,500	
Harburger & Stack	2,500	

CENTRALS—Continued.

E. Steiger & Co	500	
Graham, Hinkley & Co	800	
George A. Faber	500	
Samuels Brothers	700	7,500
DEC. 18.—By the *Havana*=Colon:		
Mann & Emdon	6,100	
Piza, Nephews & Co	1,500	
J. A. Medina & Co	1,900	
Lawrence Johnson & Co	1,400	
G. Amsinck & Co	1,000	
Harburger & Stack	400	12,300
DEC. 18.—By the *El Sud*=Galveston:		
Continental Mexico Co	7,000	
Flint & Co	500	7,500
DEC. 20.—By the *El Monte*=New Orleans:		
A. N. Rotholz	3,000	
A. T. Morse & Co	2,000	
Manhattan Rubber Mfg. Co	1,000	6,000
DEC. 20.—By the *Sarnia*=Costa Rica:		
G. Amsinck & Co	4,800	
A. A. Lindo & Co	1,500	
Roldan & Van Sickle	1,000	
Lawrence Johnson & Co	800	
Mecke & Co	500	8,300
DEC. 21.—By the *Byron*=Bahia:		
Poel & Arnold	26,500	
Hirsch & Kaiser	12,000	
L. Johnson & Co	1,500	
American Commercial Co	9 000	49,000
DEC. 22.—By the *Proteus*=New Orleans:		
A. T. Morse & Co		3,500
DEC. 22.—By the *Orinoco*=Greytown, etc:		
E. B. Strout	3,000	
Schelton & Schofeld	2,000	
American Trading Co	1 000	
Meyer Hecht	500	
J. A Medina & Co	500	
Pedro A. Lopez	500	7,500
DEC. 26.—By the *Bayamo*=Mexico:		
Thebaud Brothers	1,000	
H. Marquardt & Co	000	
Harburger & Stack	500	
European Account	11,500	13,600

AFRICANS.

	POUNDS.	
NOV. 23.—By the *Georgic*=Liverpool:		
Poel & Arnold	66,000	
F. R. Muller & Co.	11,000	77,000
NOV. 24.—By the *Pennsylvania*=Hamburg:		
Poel & Arnold	14,000	
A. T. Morse & Co	11,000	
George A. Alden & Co	11,000	
Rubber Trading Co	6,500	42,500
NOV. 25.—By the *Lucania*=Liverpool:		
George A. Alden & Co		17,500
NOV. 27.—By the *Minneapolis*=London:		
George A. Alden & Co		11,500
NOV. 27.—By the *Amerika*=Hamburg:		
George A. Alden & Co	18,000	
A. T. Morse & Co	16,000	
Poel & Arnold	5,500	
Rubber Trading Co	3,500	
General Rubber Co	6,500	49,500
NOV. 28.—By the *Armenian*=Liverpool:		
F. R Muller & Co		29,000
DEC. 1.—By the *Cedric*=Liverpool:		
George A. Alden & Co	27,500	
Poel & Arnold	13,500	
F. R. Muller & Co	16,000	
A. W. Brunn	11,500	68,500
DEC. 4.—By the *Umbria*=Liverpool:		
George A. Alden & Co	70 000	
Robinson & Tallman	6,000	76,000
DEC. 8.—By the *Kroonland*=Antwerp:		
Poel & Arnold	190,000	
A. T. Morse & Co	190,000	
George A. Alden & Co	112,000	
Western Electric Co	22,500	
General Rubber Co	17,500	532,000
DEC. 8.—By the *Baltic*=Liverpool:		
George A. Alden & Co	78 000	
Robinson & Tallman	6,500	
Poel & Arnold	2,000	
Rubber Trading Co	2,000	88,500
DEC. 11.—By the *Patricia*=Hamburg:		
A. T. Morse & Co	30,000	
Rubber Trading Co	6,000	
Poel & Arnold	5,000	41,000

AFRICANS—Continued.

DEC. 11.—By the *Carmania*=Liverpool:		
George A. Alden & Co	14,000	
Joseph Cantor	11,000	
A. T. Morse & Co	5,000	30,000
DEC. 11.—By the *Bovic*=Liverpool:		
George A. Alden & Co	56.000	
General Rubber Co	34,000	90,000
DEC. 12.—By the *Sloterdyk*=Rotterdam:		
Poel & Arnold		15,000
DEC. 13.—By the *Vaderland*=Antwerp:		
Poel & Arnold	150,000	
George A. Alden & Co	26,000	
Joseph Cantor	18,000	194,000
DEC. 14.—By the *Majestic*=Liverpool:		
A. T. Morse & Co		18,000
DEC. 15.—By the *Victorian*=Liverpool:		
A. W. Brunn	15,500	
George A. Alden & Co	3,000	18,500
DEC. 16.—By the *Peninsular*=Lisbon:		
General Rubber Co		40,000
DEC. 16.—By the *Bordeaux*=Havre:		
George A. Alden & Co		14,000
DEC. 16.—By the *Minnetonka*=London:		
George A. Alden & Co		5,000
DEC. 18.—By the *Pretoria*=Hamburg:		
George A. Alden & Co		15,500
DEC. 18.—By the *Etruria*=Liverpool:		
A. T. Morse & Co	11,500	
George A. Alden & Co	7,000	18,500
DEC. 18.—By the *Finland*=Antwerp:		
Rubber Trading Co		6,000
DEC. 19.—By the *Blucher*=Hamburg:		
George A. Alden & Co	11,500	
A. T. Morse & Co	5,500	17,000
DEC. 21.—By the *Oceanic*=Liverpool:		
F. R. Muller & Co	40 000	
Poel & Arnold	34,000	
George A. Alden & Co	16,000	90,000
DEC. 26.—By the *Caronia*=Liverpool:		
Poel & Arnold	56,000	
A. T. Morse & Co	16,000	
George A. Alden & Co	18,000	90,000

EAST INDIAN.

NOV. 27.—By the *Minneapolis*=London:		
George A. Alden & Co	25,000	
Poel & Arnold	1,000	26,000
NOV. 27.—By the *Amerika*=Hamburg:		
A. T. Morse & Co		3,000
DEC. 2.—By the *Afghan Prince*=Singapore:		
Poel & Arnold	60.000	
A. T. Morse & Co	13,500	
F. R. Muller & Co	11,500	85,000
DEC. 4.—By the *Minnehaha*=London:		
George A. Alden & Co	3,000	
Poel & Arnold	2,500	
H. W. Peabody & Co	1,000	6,500
DEC 5.—By the *La Gascogne*=Havre:		
Poel & Arnold		2,000
DEC. 5.—By the *Sierra Blanca*=Singapore:		
George A. Alden & Co	78 000	
Pierre T. Betts	9 000	
A. T. Morse & Co	11,000	
Robert Branss & Co	11,500	109,500
DEC. 13.—By the *Maine*=London:		
George A. Alden & Co	15,000	
D. A. Shaw & Co	5,500	20,502
DEC. 14.—By the *Seneca*=Singapore:		
George A. Alden & Co	25,000	
Pierre T. Betts	22,500	
Poel & Arnold	11,500	
F. R. Muller Co	4,500	63,500
DEC. 16.—By the *St. Paul*=London:		
A. T. Morse & Co		11,500
DEC. 16.—By the *Minnetonka*=London:		
Robinson & Tallman	4,500	
George A. Alden & Co	4,500	9,000
DEC. 18.—By the *Pretoria*=Hamburg:		
Earle Brothers		3,500

EAST INDIAN—Continued.

DEC. 18.—By the *Drachenfels*=Colombo:

George A. Alden & Co	1,000	
American Trading Co	1,500	2,500

DEC. 19.—By the *Albruga*=Singapore:

Heabler & Co	22,500	
A. T. Morse & Co	5,500	28,000

DEC. 21.—By the *Satsuma*=Singapore:

F. R. Muller & Co	27,000	
Pierre T. Betts	17,500	
Poel & Arnold	11,500	
D. A. Shaw & Co	4,500	60,500

GUTTA-JELUTONG.

DEC. 2.—By the *Afghan Prince*=Singapore:

Heabler & Co	155,000	
George A. Alden & Co	265,000	
F. R. Muller & Co	50,000	
Poel & Arnold	150,000	600,000

DEC. 5.—By the *Sierra Blanca*=Singapore:

George A. Alden & Co	455,000	
Heabler & Co	110,000	
Pierre T. Betts	25,000	
Robert Branss & Co	55,000	640,000

DEC. 14.—By the *Seneca*=Singapore.

George A. Alden & Co	295,000	
Robert Branss & Co	125,000	
Robinson & Tallman	150,000	570,000

DEC. 19.—By the *Albenga*=Singapore.

George A. Alden & Co	225,000	
Heabler & Co	110,000	335,000

DEC. 21.—By the *Satsuma*=Singapore.

J. W. Phyfer & Co	55,000

GUTTA-PERCHA AND BALATA.

	POUNDS.	
NOV. 24.—By the *Pennsylvania*=Hamburg:		
To Order		7,000
NOV. 27.—By the *Minneapolis*=London:		
R. F. Muller & Co		13,500

GUTTA-PERCHA AND BALATA—Continued.

DEC. 5.—By the *Sierra Blanca*=Singapore:

To Order		115,000

DEC. 14.—By the *Seneca*=Singapore:

George A. Alden & Co	34,000	
Poel & Arnold	11,500	
Heabler & Co	11,500	57,000

DEC. 16.—By the *Minnetonka*=London:

Henry A. Gould Co	17,500

DEC. 18.—By the *Pretoria*=Hamburg:

To Order	37,000

BALATA.

NOV. 24.—By the *Maraval*=Cuidad Bolivar:		
Middleton & Co	7,000	
A. H. Wappans	45,000	52,000
DEC 12.—By the *Sloterdyk*=Rotterdam:		
Earle Brothers		11,500
DEC. 13.—By the *Maine*=London:		
Earle Brothers		10,000
DEC. 18.—By the *Pretoria*=Hamburg:		
Earle Brothers		5,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—NOVEMBER.

Imports:	POUNDS.	VALUE.
India-rubber	4,373,403	$3,667,179
Gutta-percha	12,181	12,865
Gutta-jelutong (Pontianak)	1,486,676	71,303
Total	5,872,260	$3,751,347
Exports:		
India-rubber	27,518	$ 19,861
Reclaimed rubber	226,010	35,715
Rubber Scrap Imported	1,943,380	$149,326

BOSTON ARRIVALS.

	POUNDS.
OCT. 2.—By the *Michigan*=Liverpool:	
George A. Alden & Co.—African	11,105
OCT. 2—By the *Saxonia*=Liverpool:	
Poel & Arnold—African	10,528
OCT. 17.—By the *Sachem*=Liverpool:	
F. R. Müller & Co.—African	5,560
OCT. 25.—By the *Sagamore*=Liverpool:	
Poel & Arnold—African	12,313
OCT. 30.—By the *Devonian*=Liverpool:	
Poel & Arnold—African	2,506
Poel & Arnold—Caucho	34,869
Total	76,881

[Value, $45,664.]

	POUNDS	
NOV. 4.—By the *Saxonia*=Liverpool:		
George A. Alden & Co.—African	6,754	
George A. Alden & Co.—Caucho	84,480	91,234
NOV. 8.—By the *Michigan*=Liverpool:		
George A. Alden & Co.—African		10,374
NOV. 15.—By the *Marquette*=Antwerp:		
George A. Alden & Co.—African		30,522
NOV. 20.—By the *Sachem*=Liverpool:		
Poel & Arnold.—African		7,047
NOV. 21.—By the *Sachem*=Liverpool:		
F. R. Muller & Co.—African		5,891
NOV. 27.—By the *Sagamore*=Liverpool:		
George A. Alden & Co.—Fine Par		3,671
NOV. 27.—By the *Bulgaria*=Hamburg:		
Poel & Arnold.—African		5,654
Total		154,398

[Value, $103,151.]

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1905	4,803,749	413,335	4,390,414
January-September	49,676,268	2,356,825	47,319,443
Ten months, 1905	54,480,017	2,770,160	51,709,857
Ten months, 1904	49,951,326	2,884,587	47,066,739
Ten months, 1903	46,495,455	2,958,223	43,537,232

GREAT BRITAIN.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1905	4,971,904	2,818,592	2,153,312
January-September	46,466,224	25,599,392	20,866,832
Ten months, 1905	51,438,128	28,417,984	23,020,144
Ten months, 1904	45,566,416	26,909,910	18,656,506
Ten months, 1903	44,926,000	32,337,424	12,588,576

GERMANY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1905	4,138,420	1,738,440	2,399,980
January-September	33,791,120	12,538,900	21,252,220
Ten months, 1905	37,929,540	14,277,340	23,652,200
Ten months, 1904	29,682,620	7,787,780	21,894,840
Ten months, 1903	28,516,400	9,751,500	18,764,900

ITALY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1905	140,140	4,400	135,740
January-September	1,244,100	222,420	1,021,680
Ten months, 1905	1,384,240	226,820	1,157,420
Ten months, 1904	1,269,840	103,180	1,166,660
Ten months, 1903	1,286,120	126,720	1,159,400

FRANCE.*

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1905			
January-September	19,182,900	12,190,640	6,992,260
Ten months, 1905			
Ten months, 1904	17,219,180	9,367,600	7,851,580
Ten months, 1903	13,195,820	7,619,040	5,576,780

AUSTRIA-HUNGARY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1905	188,760	5,500	183,260
January-September	2,275,680	21,780	2,253,900
Ten months, 1905	2,464,440	27,280	2,437,160
Ten months, 1904	2,297,900	18,920	2,278,980
Ten months, 1903	2,400,420	22,660	2,377,760

BELGIUM.†

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1905	2,576,706	1,979,287	597,419
January-September	12,953,283	9,492,946	3,460,337
Ten months, 1905	15,529,989	11,472,233	4,057,756
Ten months, 1904	15,058,005	12,665,992	2,392,013
Ten months, 1903	13,949,509	10,595,017	3,354,492

NOTE.—German statistics include Gutta-percha, Balata, old (waste) rubber, and substitutes. British figures include old rubber. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

*General Commerce. †Special Commerce.

BUYERS' DIRECTORY OF THE RUBBER TRADE.

CLASSIFIED LIST OF MANUFACTURERS AND DEALERS IN INDIA-RUBBER GOODS AND RUBBER MANUFACTURERS' SUPPLIES.

INDEX TO ADVERTISERS.

NAME.	PAGE.
Acker Process Co	I, XXVI
Adamson, A	XXXI
Alton Machine Co	XXXII
Akron Rubber Works	XIX
Albert & Son, L	XXIV
Alden & Co., Geo. A	XII, XXIV
Alderfer Crate Co	XL
Alkali Rubber Co	XXIII
American Hard Rubber Co	XV
American Process Co	XXXV
American Rubber Reclaiming Co	I
American Tool & Machine Co	XXIX
Appleton & Son, F. H	XIII
Atlas Chemical Co	XVI
Bachrach, Jos	XVI
Bailey & Co., C. J	XIV
Barrett Mfg. Co	XXVII
Battelle & Renwick	XXVII
Bay State Machine Co	XL
Bers & Co	XXV
Birkenstein & Sons, S	XXV
Birmingham Iron Foundry	XXXIV
Bloomingdale Soft Rubber Wks	XXXVIII
Boomer & Boschert Press Co	XXXV
Boston Belting Co	III
Boston Woven Hose & Rubber Co	V
Bowers Rubber Co	VIII
Broomfield & Co., Philip	XXV
Brunn, A. W	XXIV
Cabot, Samuel	I
Canadian Rubber Co. of Montreal	II
Cantor, Joseph	XXVII
Chicago Rubber Wks	XX
Cincinnati Rubber Mfg. Co	VIII
Clapp Rubber Co., E. H	XLIX
Clark, Edred W	XXXI
Cleveland Rubber Wks	
Coleman Co, W. C	I, XXV
Combination Rubber Mfg. Co	VI
Continental Caoutchouc & Gutta Percha Co	XIII
Cravenette Co., Ltd	I
Cummings & Sons, Wm. H	XXV
Danversport Rubber Co	XXIII
Davidson Rubber Co	
Davol Rubber Co	XIV
Derby Rubber Co	XXXVIII
Devine, Joseph P	XXXVI
Dixon Crucible Co, Jos	XXXI
Dunlop Tire & Rubber Goods Co	XIII
Egestorff's (Georg) Salzwerke	XXVII
Electric Hose & Rubber Co	XL
Empire Rubber Mfg. Co	IV
Eureka Fire Hose Co	IV
Eureka Rubber Mfg. Co	XI
Fabric Fire Hose Co	IV
Farrel Foundry & Machine Co	XXXIII
Faultless Rubber Co	XIV
Fine, Horace E	XL
Gabriel & Schall	XXVII
Goodrich Co., B. F	XIX
Granby Rubber Co	LI
Grieb Rubber Co	X
Gummi-Zeitung	XL
Gutta Percha & Rubber Mfg. Co	LII
Gutta Percha & Rubber Mfg. Co., Toronto	LI
Hagemeyer & Brunn	XXIV
Hardman Rubber Co	XIV
Heyl-Dia, George, E	XLIV
Hidalgo Plantation & Commercial Co	XLIV
Hirsch & Kaiser, Inc	XXIV
Hodgman Rubber Co	VI
Hofelier & Co., Theodore	XXV
Hoggson & Pettis Mfg. Co	XXXV
Home Rubber Co	IX
Hood Rubber Co	LII
Hubbard's Sons, Norman	XXXVI
India-Rubber Pub. Co	XLI
Jenkins Bros	X
"Journal d'Agriculture Tropicale"	LI
Kerby, J. Orton	XLI
Kimball, Herbert S	XXXVII
Kokomo Rubber Co	XIII
Kush, Gustave	X
La Crosse Rubber Mills Co	XXII
Lake Shore Rubber Co	XII
Lane & Co., J. H	XXXVI
Le Caoutchouc & La Gutta-Percha	XLI
Leslie & Co., A. W	XXV
Liverpool Rubber Co., Ltd	II
Lufbery, Jr., Geo. F	XLI
McGrory, Philip	XXV
Macintosh & Co., Chas	XLIII
Manhattan Rubber Mfg. Co	XII
Manufactured Rubber Co	XXIV
Mason Regulator Co	XXXVI
Massachusetts Chemical Co	XXVI
Mattson Rubber Co	XV
Maurer, Ed	XXIV
Mechanical Fabric Co	X
Mechanical Rubber Co	XX
Mexican Mutual Planters Co	XLIII
Middlesex Last Co	XLI
Mitzel Rubber Co	XV
Müller & Co., F. R	XXIV
New England Butt Co	XXXII
New Jersey Car Spring & Rubber Co	X
New Jersey Rubber Co	XXXVIII
New Jersey Zinc Co	XXVI
New York Belting & Packing Co	XX
New York Rubber Co	VIII
North British Rubber Co., Ltd	XXXI
Peerless Rubber Mfg. Co	XVIII
Pequanoc Rubber Co	XXIII
Peru-Pará Rubber Co	XLIII
Philadelphia Rubber Wks	XXVIII
Picher Lead Co	XXI
Plymouth Rubber Co	XXIX
Pirelli & Co	XII
Pure Gum Specialty Co	XVI
Raven Mining Co	XI
Republic Rubber Co	XVI
Revere Rubber Co	I
Rindskopf, H. P	XXV
Royle & Sons, John	XXXIX
Rubber Trading Co	XXI
S. & L. Rubber Co	II
San Giacomo Sons	XXV
Sayen, Osgood	XL
Scheel, Wm. H	XXVI
Schnurmann, J	XXV
Schrader's Son, Inc., A	XVI
Schwab & Co	XXV
Seamless Rubber Co	XV
Sharples, Stephen P	XXXV
Shelp Mfg. Co., Henry H	XXIX
South American Commercial Agency	XXVII
Speaight, Geo. W	I
Springfield Elastic Tread Co	XLI
Stamford Rubber Supply Co	XXVII
Standard Rubber Co	X
Stockton Rubber Co	XXXVIII
Stokes Rubber Co., Jos	XV
Taintor Mfg. Co., H. F	VII
Textile-Finishing Machinery Co	XXXV
Thropp, William R	XXXI
Tire News Co	XXXIX
Toch Bros	XXVII
Trenton Rubber Mfg. Co	IX
"Tropical Agriculturist"	LI
Turner, Vaughn & Taylor Co	XI
Tyer Rubber Co	LII
Typke & King	XXVII
United States Graphite Co	II
United States Rubber Co	XVII
U. S. Rubber Reclaiming Wks	XXX
U. S. Waste Rubber Co	XXXVII
Voorhees Rubber Mfg. Co	V
Wanted and For Sale	XXXVII
Weld Mfg. Co	I
Weilman Sole Cutting Machine Co	XXXVI
White, T. & S. C., Co	XXVII
Williams & Bros., J. F	XLI
Wirt & Knox Mfg. Co	XIII
Woipert, M. J	XXI
Woodman, Ph.D., Durand	XXVII
Yerdon, William	XXXV

MECHANICAL RUBBER GOODS

Belting.
Diaphragms.
Gaskets.
Hose (Fire, Garden, Steam).
Mats and Matting.
Mould Work.
Packing.
Valves.
Washers.

Mechanical Rubber Goods—General.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Bowers Rubber Co., San Francisco, Cal.
Canadian Rubber Co. of Montreal.
Chicago Rubber Wks., Chicago.
Cincinnati Rubber Mfg. Co., Cincinnati.
Cleveland Rubber Co., Cleveland, O.
Combination Rubber Mfg. Co., Bloomfield, N. J.
Continental Caoutchouc & Guttapercha Co., Hanover, Germany.
Dunlop Tire & Rubber Goods Co., Toronto.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Co., New York.
Eureka Rubber Mfg. Co. of Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha & Rubber Mfg. Co., Toronto.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
Liverpool Rubber Co., Liverpool, Eng
Chas. Macintosh & Co., Ltd., Manchester, England.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
North British Rubber Co., Ltd., Edinburgh.
Peerless Rubber Mfg. Co., New York.
Pirelli & Co., Milan, Italy.
Republic Rubber Co., Youngstown, Ohio.
Revere Rubber Co., Boston.
Standard Rubber Co, Trenton, N. J.
Jos. Stokes Rubber Co., Trenton, N. J.
Trenton Rubber Mfg. Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Air Brake Hose.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Combination Rubber Mfg. Co., Bloomfield, N. J.
Eureka Rubber Mfg. Co. of Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co, New York.
Republic Rubber Co., Youngstown, Ohio.
Revere Rubber Co., Boston-New York
Voorhees Rubber Mfg. Co., Jersey City

Belting (Canvas).

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Eureka Fire Hose Co., New York.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston New York.

Billiard Cushions.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Combination Rubber Mfg. Co., Bloomfield, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.

Billiard Cushions.—Continued.

Manhattan Rubber Mfg Co., New York
New York Belting & Packing Co., Ltd
New York Rubber Co., New York.
Revere Rubber Co., Boston-New York.

Blankets—Printers'.

Peerless Rubber Mfg. Co., New York.
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y
Hodgman Rubber Co., New York.
Gustave Kush, New York.
Liverpool Rubber Co., Liverpool, Eng.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City

Brushes.

C. J. Bailey & Co., Boston.

Buffers.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y
Liverpool Rubber Co., Ltd., Liverpool

Card Cloths.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I

Carriage Mats.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg Co., N. Y
Home Rubber Co., Trenton, N. J.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Voorhees Rubber Mfg. Co., Jersey City

Cord (Pure Rubber).

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Cleveland Rubber Co., Cleveland, O.

Cord (Pure Rubber).—Continued.

Davol Rubber Co., Providence, R. I.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Deckle Straps.

Boston Belting Co, Boston.
B. F. Goodrich Co., Akron, O.
Liverpool Rubber Co., Liverpool, Eng
Mechanical Rubber Co., Chicago.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.

Door Springs.

Hodgman Rubber Co., New York.

Dredging Sleeves.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
N. J. Car Spring & Rubber Co., Jersey City.
Republic Rubber Co., Youngstown, O.

Force Cups.

Hodgman Rubber Co., New York.

Fruit Jar Rings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co. of Trenton.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, Ohio.
New York Belting & Packing Co., N. Y.

Fuller Balls.

B. F. Goodrich Co., Akron, O.

RUBBER BUYERS' DIRECTORY—CONTINUED.

Fuller Balls.—Continued.

N. J. Car Spring & Rubber Co Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Gage Glass Washers.

Boston Belting Co., Boston, Mass.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Liverpool Rubber Co., Liverpool, Eng.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Revere Rubber Co., Boston, Mass.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Gas-Bags (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Liverpool Rubber Co., Liverpool, Eng.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Tyer Rubber Co., Andover, Mass.
Voorhees Rubber Mfg. Co., Jersey City.

Gasket Tubing.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Revere Rubber Co., Boston.

Grain Drill Tubes.

Cincinnati Rubber Mfg. Co., Cincinnati, O.

Hat Bags.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Horse Shoe Pads.

Canadian Rubber Co. of Montreal.
Home Rubber Co., Trenton, N. J.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City

Hose—Armored.

Hose—Wire Wound.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co of Montreal.
Electric Hose & Rubber Co. Wilmington, Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Chas. Macintosh & Co., Ltd., Manchester, England.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Couplings and Fittings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Hose Linings.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston.

Hose—Protected.

Boston Belting Co., Boston-New York.
Gutta Percha & Rubber Mfg. Co., N. Y.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Core.

Alderfer Crate Co., Sharon Centre, Ohio.

Hose Racks and Reels.

Gutta Percha & Rubber Mfg. Co., N. Y.
Wirt & Knox Mfg. Co., Philadelphia.

Hose—Rubber Lined.

COTTON AND LINEN.

Boston Belting Co., Boston-New York
Boston Woven Hose & Rubber Co.
Gutta Percha & Rubber Mfg. Co., N. Y.

COTTON AND LINEN.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Co., New York.
Eureka Rubber Mfg. Co. of Trenton.
Fabric Fire Hose Co., New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha and Rubber Mfg. Co. of Toronto.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Submarine.

Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

"Jenkins '96" Packing.

Jenkins Bros., New York.

Lawn Sprinklers.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Mallets (Rubber).

Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston New York.

Mould Work.

[*See Mechanical Rubber Goods.*]

Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
Mattson Rubber Co., New York.
Mitzel Rubber Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

"Nubian" Packing.

Voorhees Rubber Mfg. Co., Jersey City.

Oil Well Supplies.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City.

Paper Machine Rollers.

Boston Belting Co., Boston-New York
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Peerless Rubber Mfg. Co., New York.
Voorhees Rubber Mfg. Co., Jersey City.

Plumbers' Supplies.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Republic Rubber Co., Youngstown, O.

Pump Valves.

[*See Mechanical Rubber Goods.*]

Jenkins Bros., New York.

Rollers—Rubber Covered.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co. of Trenton.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston New York.

Sewing Machine Rubbers.

B. F. Goodrich Co., Akron, O.

Springs—Rubber.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Hardman Rubber Co., Belleville, N. J.
Liverpool Rubber Co., Liverpool, Eng.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, Ohio.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Stair Treads.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Home Rubber Co., Trenton, N. J.
Liverpool Rubber Co., Liverpool, Eng.
Manhattan Rubber Mfg. Co., New York
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Thread.

B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I.
Revere Rubber Co., Boston.

Tiling.

Canadian Rubber Co. of Montreal, Ltd.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, Ohio.
Voorhees Rubber Mfg. Co., Jersey City.

Tires.

AUTOMOBILE, BICYCLE, AND CARRIAGE.

Canadian Rubber Co. of Montreal, Ltd.
Continental Caoutchouc & Guttapercha Co., Hanover.
Dunlop Tire & Rubber Goods Co., Toronto.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., Toronto.
Kokomo Rubber Co., Kokomo, Ind.
Lake Shore Rubber Co., Erie, Pa.
Liverpool Rubber Co., Liverpool, Eng.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
North British Rubber Co., Ltd., Edinburgh.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.

Tires.—Continued.

AUTOMOBILE AND CARRIAGE

Boston Belting Co., Boston-New York.
Eureka Rubber Mfg. Co., Trenton, N. J.
Revere Rubber Co., Boston-New York.

Tubing.

[*See Mechanical Rubber Goods.*]

American Hard Rubber Co., New York.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Valve Balls.

Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York
Mechanical Rubber Co., Chicago.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Valve Discs.

American Hard Rubber Co., New York.
Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Valves.

[*See Mechanical Rubber Goods.*]

Jenkins Bros., New York-Chicago.

Wringer Rolls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Republic Rubber Co., Youngstown, O.

DRUGGISTS' AND STATIONERS' SUNDRIES

Atomizers.

Bandages.

Bulbs.

Syringes.

Water Bottles.

Druggists' Sundries—General.

American Hard Rubber Co., New York.
C. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Est. of Jos. Bachrach, Brooklyn, N. Y.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
Mitzel Rubber Co., Akron, O.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass

Balls, Dolls and Toys.

Canadian Rubber Co. of Montreal.
Continental Caoutchouc & Guttapercha Co.
B. F. Goodrich Co., Akron, O.
New York Rubber Co., New York

Combs.

American Hard Rubber Co., New York.

RUBBER BUYERS' DIRECTORY—CONTINUED.

Elastic Bands.

Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston
Tyer Rubber Co., Andover, Mass.

Erasive Rubbers.

Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Mattson Rubber Co., New York.

Finger Cots.

Faultless Rubber Mfg. Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.

Gloves.

Canadian Rubber Co. of Montreal.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Davol Rubber Co., Providence, R. I.
Hardman Rubber Co., Belleville, N. J.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheetings.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Ice Bags and Ice Caps.

Est. of Jos. Bacharach, Brooklyn, N. Y.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Pure Gum Specialty Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

Life Preservers.

Hodgman Rubber Co., New York.

Nipples.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

Sponges (Rubber).

Faultless Rubber Co., Ashland, Ohio.

Stationers' Sundries.

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, O.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hardman Rubber Co., Belleville, N. J.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass

Stopples (Rubber).

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
New York Belting & Packing Co., N. Y.
Tyer Rubber Co., Andover, Mass.

Throat Bags.

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Tyer Rubber Co. Andover, Mass.

Tobacco Pouches.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS

Air Goods (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
New York Rubber Co., New York.
National India Rubber Co., Providence.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.

Barbers' Bibs.

Davol Rubber Co., Providence, R. I.
Tyer Rubber Co., Andover, Mass.

Bathing Caps.

Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.

Bellows Cloths.

Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.

Calendering.

La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass

Carriage Ducks and Drills.

Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J
Eureka Rubber Mfg. Co. of Trenton.
Gutta Percha & Rubber Mfg. Co., Toronto.

Clothing.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg Co. of Toronto.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.

Cravenette.

Cravenette Co., Ltd.

Diving Dresses.

Hodgman Rubber Co., New York.

Dress Shields.

Hodgman Rubber Co., New York.
Mattson Rubber Co., New York.

Horse Covers.

Hodgman Rubber Co., New York.

Leggings.

Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.

Mackintoshes.

[See Clothing.]

Proofing.

Canadian Rubber Co. of Montreal.
La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass

Rain Coats.

Cravenette Co., Ltd.

Rubber Coated Cloths.

Mechanical Fabric Co., Providence, R. I.

RUBBER FOOTWEAR

Boots and Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Canadian Rubber Co. of Montrea
L. Candee & Co., New Haven, Ct.
B. F. Goodrich Co., Akron, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hood Rubber Co., Boston.
Liverpool Rubber Co., Liverpool, Eng.
Lycoming Rubber Co., Williamsport, Pa
Meyer Rubber Co., New York.
National India Rubber Co., Boston.
North British Rubber Co., Ltd., Edinburgh.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Heels and Soles.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Caoutchoue & Guttapercha Co., Hanover,
Grieb Rubber Co., Trenton, N. J.
Plymouth Rubber Co., Stoughton, Mass.
Springfield Elastic Tread Co., Springfield, Ohio.

Tennis Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co. Boston.
Granby Rubber Co., Granby, Quebec.
La Crosse Rubber Mills Co., La Crosse, Wis.
Liverpool Rubber Co., Liverpool, Eng.
National India Rubber Co., Providence
United States Rubber Co., New York.

Wading Pants.

Canadian Rubber Co. of Montreal.
Hodgman Rubber Co., New York.

SPORTING GOODS

Foot Balls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.

Golf Balls.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.

Submarine Outfits.

Hodgman Rubber Co., New York.

Sporting Goods.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Striking Bags.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, Ohio.
B. F. Goodrich Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.

DENTAL AND STAMP RUBBER

Dental Gum.

American Hard Rubber Co., New York
Cleveland Rubber Co., Cleveland, O.
Tyer Rubber Co., Andover, Mass.

Rubber Dam.

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.

B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., New York.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

ELECTRICAL

Electrical Supplies.

American Hard Rubber Co., New York.
Lake Shore Rubber Co., Erie, Pa.
Joseph Stokes Rubber Co., Trenton, N. J.
Chas. Macintosh & Co., Ltd., Manchester, Eng.
Massachusetts Chemical Co., Boston.
Tyer Rubber Co., Andover, Mass.

Friction Tape.

Boston Belting Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Rubber Co., Akron, O.
Massachusetts Chemical Co., Boston.
Mechanical Rubber Co., Chicago.
Home Rubber Co., Trenton, N. J.
Revere Rubber Co., Boston-New York.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Joseph Stokes Rubber Co., Trenton, N. J.

Insulating Compounds.

Canadian Rubber Co. of Montreal.
Gutta-Percha & Rubber Mfg. Co., Toronto.
Massachusetts Chemical Co., Boston.

Insulated Wire and Cables.

National India Rubber Co., Providence

Splicing Compound.

Home Rubber Co., Trenton, N. J.

MISCELLANEOUS

Architect and Engineer.

Herbert S. Kimball, Boston.

Cement (Rubber).

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

Chemical Analyses.

Durand Woodman, Ph D., New York.
H. L. Terry, Manchester, England.

Chemists.

Stephen P. Sharples, Boston, Mass.
Durand Woodman, Ph. D., New York.

Laboratory—Tests, Analyses.

G. E. Heyl-Dia, New York.

Rubber Journals.

Gummi-Zeitung, Dresden, Germany.

Rubber Planting.

Hidalgo Plantation and Commercial Co., San Francisco.
Mexican Mutual Rubber Co., Chicago,

Rubber Tree Seeds.

J. P. William & Bros., Heneratgoda. Ceylon.

MACHINERY AND SUPPLIES FOR RUBBER MILLS.

RUBBER MACHINERY

Acid Tanks.
Birmingham Iron Foundry, Derby, Ct.

Band Cutting Machine.
A. Adamson, Akron, O.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.

Belt Folding Machines.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Belt Slitters.
Cloth Dryers.
Gearing.
Shafting.
Wrapping Machines.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Belt Stretchers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
Hoggson & Pettis Mfg. Co., New Haven.

Bollers.
William R. Thropp, Trenton, N. J.

Braiders.
New England Butt Co., Providence, R. I.

Brands and Labels.
Horace E. Fine, Trenton, N. J.

Buckles.
The Weld Mfg. Co., Boston.

Cabling Machinery.
Alton Machine Co., New York.

Calenders.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
Textile-Finishing Machinery Co., Providence, R. I.

Castings.
A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach Co., Ansonia, Ct.

Chucks (Lathe).
Hoggson & Pettis Mfg. Co., New Haven.

Churns.
American Tool & Machine Co., Boston.

Clutches.
Farrel Foundry & Mach. Co., Ansonia, Ct

Crackers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.

Devulcanizers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Edred W. Clark, Hartford, Ct.
William R. Thropp, Trenton, N. J.

Dies.
Hoggson & Pettis Mfg. Co., New Haven.

Doubling Machines.
American Tool & Machine Co., Boston.

Drying Apparatus.
American Process Co., New York.

Drying Machines.
Alton Machine Co., New York.
Joseph P. Devine, Buffalo, N. Y.
Birmingham Iron Foundry, Derby, Ct.
Textile-Finishing Machinery Co., Providence, R. I.

Embossing Calenders.
Textile-Finishing Machinery Co., Providence, R. I.

Engines, Steam.
Alton Machine Co., New York.
William R. Thropp, Trenton, N. J.

Engraving Roll.
Hoggson & Pettis Mfg. Co., New Haven.

Factory Construction.
Herbert S. Kimball, Boston.

Grinders and Mixers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Hangers.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Hose Machines.
A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
New England Butt Co., Providence, R. I.

Hydraulic Accumulators.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Hydraulic Machinery.
Insulating Machinery.
Iron Castings.
Alton Machine Co., New York.

Lasts (Rubber Shoe).
Middlesex Last Co., Boston.

Lathes—Hard Rubber.
A. Adamson, Akron, Ohio.

Lathes—Jar Ring.
A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
William R. Thropp, Trenton, N. J.

Machinists' Tools.
Hoggson & Pettis Mfg. Co., New Haven.

Moulds.
A. Adamson, Akron, Ohio.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Hoggson & Pettis Mfg. Co., New Haven.

Pillow Blocks.
Farrel Foundry & Mach. Co., Ansonia, Ct

Presses (for Rubber Work.)
A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Birmingham Iron Foundry, Derby, Ct.
Boomer & Boschert Press Co., Syracuse, N. Y.
Edred W. Clark, Hartford, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Pumps.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Boomer & Boschert Press Co., Syracuse.
Farrel Foundry & Mach. Co., Ansonia, Ct.

Racks for Boot and Shoe Cars.
Hoggson & Pettis Mfg. Co., New Haven.

Reducing Valves.
Mason Regulator Co., Boston.

Rollers (Hand).
Hoggson & Pettis Mfg. Co., New Haven.

Rubber Covering Machines.
Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Separators.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Separators for Reclaimed Rubber.
American Process Co., New York.

Special Rubber Machinery.
Alton Machine Co., New York.
Wellman Sole Cutting Machine Co., Medford, Mass.

Spreaders.
Alton Machine Co., New York.
American Tool & Machine Co., Boston.
Birmingham Iron Foundry, Derby, Ct.
New England Butt Co., Providence, R. I.

Steam Traps and Specialties.
Jenkins Bros., New York.
Mason Regulator Co., Boston.
Osgood Sayen, Philadelphia, Pa.

Steel Stamps.
Hoggson & Pettis Mfg. Co., New Haven.

Stitchers (Hand).
Hoggson & Pettis Mfg. Co., New Haven

Strip Covering Machines.
Strip Cutters.
Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Tire Molds.
Bay State Machine Co., Erie, Pa.

Tubing Machines.
A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Edred W. Clark, Hartford, Ct.
John Royle & Sons, Paterson, N. J.

Vacuum Drying Chambers.
Alton Machine Co., New York.
Joseph P. Devine, Buffalo, N. Y.

Varnishing Machines.
Birmingham Iron Foundry, Derby, Ct.

Vulcanizers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct.
William R. Thropp, Trenton, N. J.

Washers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Ct.
Farrel Foundry & Mach. Co., Ansonia, Ct
William R. Thropp, Trenton, N. J
Turner, Vaughn & Taylor Co., Cuyahoga Falls, Ohio.

Wire Insulating Machines.
Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Wire Rope Machinery.
Alton Machine Co., New York.

SECOND-HAND MACHINERY.

W. C. Coleman Co., Rochelle Park, N. J.
Philip McGrory, Trenton, N. J.

FACTORY SUPPLIES

Acid (Carbolic).
Barrett Mfg. Co., Philadelphia.

Antimony, Sulphurets of.
GOLDEN.
Actien-Ges. Georg Egestorff's Salzwerke, Linden, Germany.
Atlas Chemical Co., Newtonville, Mass.
GOLDEN AND CRIMSON.
Joseph Cantor, New York.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Typke & King, London, England.

Balata.
George A. Alden & Co., Boston.

Benzol.
Barrett Mfg. Co., Philadelphia.
Samuel Cabot, Boston.

Black Hypo.
Joseph Cantor, New York.
William H. Scheel, New York.
Typke & King, London, England.

Boxes (Wood).
Henry H. Sheip & Co., Philadelphia.

Brass Fittings.
A. Schrader's Son, Inc., New York.

Carbon Bisulphide.
George W. Speaight, New York.

Caustic Soda.
Acker Process Co., Niagara Falls, N. Y.

Chemicals.
Acker Process Co., Niagara Falls, N. Y.
Empire Palm Oil Co., Boston.
George W. Speiaght, New York.

Colors.
Joseph Cantor, New York.
William H. Scheel, New York.
Toch Bros., New York.
Typke & King, London, England.

Crude Rubber.
George A. Alden & Co., Boston.
A. W. Brunn, New York.
Hagemeyer & Brunn, New York.
Hirsch & Kaiser, Inc., New York.
F. R. Müller & Co., New York.
Rubber Trading Co., New York-Boston.

Drills.
Duck (Cotton).
J. H. Lane & Co., New York.

Gilsonite.
William H. Scheel, New York.

Graphite.
United States Graphite Co., Philadelphia.

Graphite Grease.
Jos. Dixon Crucible Co., Jersey City

Guayule Rubber.
Ed. Maurer, New York.

Gutta-Percha.
George A. Alden & Co., Boston.
Rubber Trading Co., New York-Boston

Hose Bands, Straps & Menders.
Boston Woven Hose & Rubber Co.
William Yerdon, Fort Plain, N. Y.

Hose Pipes, Nozzles & Couplings.
Boston Woven Hose & Rubber Co.
Eureka Fire Hose Co., New York.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.

Hydro-Carbon Products.
Geo. A. Alden & Co., Boston.
Raven Mining Co., Chicago, Ill.
William H. Scheel, New York.

Infusorial Earth.
Stamford (Conn.) Rubber Supply Co.

Kapak.
Raven Mining Co., Chicago, Ill.

Lampblack.
Samuel Cabot, Boston.

Lawn-Hose Supporters.
C. J. Bailey & Co., Boston.

Lead—Blue.
Lead—Sublimed White.
Picher Lead Co., Chicago, Ill.

Lithopone.
Gabriel & Schall, New York.

Naphtha.
Barrett Mfg. Co., Philadelphia.

Paris White and Whiting.
H. F. Taintor Mfg. Co., New York.

Reclaimed Rubber.
Alkali Rubber Co., Akron, Ohio.
American Reclaimed Rubber Co., Rochelle Park, N. J.
F. H. Appleton & Son, Boston.
Bloomingdale (N. J.) Soft Rubber Co.
E. H. Clapp Rubber Co., Boston, Mass.
Danversport Rubber Co., Boston.
Derby Rubber Co., Derby, Conn.
Manufactured Rubber Co.
New Jersey Rubber Co., Lambertville, N. J.
Pequanoc Rubber Co., Butler, N. J.
Philadelphia Rubber Wks., Philadelphia.
Stockton Rubber Co., Stockton, N. J.
Jos. Stokes Rubber Co., Trenton, N. J.
S. & L. Rubber Co., Chester, Pa.
U. S. Rubber Reclaiming Wks., N. Y.
AGENTS AND DEALERS.
Philip McGrory, Trenton, N. J.
H. P. Moorhouse, Paris, France.
Rubber Trading Co., New York-Boston.
Wm. Somerville's Sons, Liverpool.

Scrap Rubber.
L. Albert & Son, Trenton, N. J.
Bers & Co., Philadelphia.
P. Broomfield & Co., Boston.
W. C. Coleman Co., Rochelle Park, N. J.
Wm. H. Cummings & Sons, New York.
Theodore Hofeller & Co., Buffalo, N. Y.
A. W. Leslie & Co., Ltd., London, Eng.
Philip McGrory, Trenton, N. J.
Henry P. Rindskopf, Brooklyn, N. Y.
San Giacomo Sons, Newark, N. J.
J. Schnurmann, London.
Schwab & Co., Philadelphia.
United States Waste Rubber Co., Brockton, Mass.
M. J. Wolpert, Odessa, Russia.

Substitute.
Joseph Cantor, New York
Geo. F. Lufbery, Jr., Elizabeth, N. J.
Massachusetts Chemical Co., Boston.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Typke & King, London, England.

Sulphur.
Battelle & Renwick, New York.
T. & S. C. White Co., New York.

Sulphur Chloride.
Acker Process Co., Niagara Falls, N. Y.
William H. Scheel, New York.
George W. Speaight, New York.
Stamford (Conn.) Rubber Supply Co.

Tire Fabrics.
J. H. Lane & Co., New York.

Tire Valves.
A. Schrader's Son, Inc., New York.

Zinc Sulphide.
Joseph Cantor, New York.
Typke & King, London, England.

Zinc White.
New Jersey Zinc Co., New York.
Stamford (Conn.) Rubber Supply Co.